

IMPLEMENTATION OF A CLASS-WIDE INTERVENTION TO TEACH BEHAVIORAL
EXPECTATIONS IN HEAD START

BY

CHARIS LAUREN PRICE

DISSERTATION

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Dissertation Committee:

Professor Michaelene M. Ostrosky, Chair
Professor Rosa Milagros Santos Gilbertz
Professor Mary Louise Hemmeter, Vanderbilt University
Associate Professor Hedda Meadan-Kaplansky

Abstract

Children and teachers were recruited from two Head Start programs in a Midwestern city to participate in this study focused on behavioral expectations. Using a multiple probe design across four classrooms, the impact of scripted stories, role play, and prompts was examined. Teachers were trained on how to implement effective strategies to teach behavioral expectations to young children. Although a functional relation was not established, teachers implemented the evidence-based strategies with high fidelity which resulted in adherence to behavioral expectations for two child participants.

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Chapter 1

Introduction

Many young children enter early childhood programs unprepared for the experience of schooling (Ramey & Ramey, 2004; West, Denton, & Reaney, 2001). These children often enter group care settings for the first time and may not have the social and emotional skills to navigate these environments (Hemmeter, Ostrosky, Artman, & Kinder, 2008). Young children who are new to group care may exhibit delays in key areas that are predictors of academic performance. A critical area in which many young children experience delays is social and emotional competence. Children's social and emotional competence and its impact on their academic learning are more closely linked in the early years than what was previously understood (Ashdown & Bernard, 2012; Raver & Knitzer, 2002; Shonkoff & Phillips, 2000). Early childhood teachers expect children to demonstrate a range of social and emotional competencies that include attending to instructions, following directions, listening attentively, and being cooperative (Lane, Givner, & Pierson, 2004; Lane, Pierson, & Givner, 2003; Lane, Stanton-Chapman, Jamison, & Phillips, 2007). These competencies are often required during important routines and transitions and needed to be successful in early childhood contexts. When young children lack these social and emotional skills, they may experience failure in preschool and later in life (Center for Evidence-Based Practice, 2003; Gilliam, 2005; Lane et al., 2007).

The Center on the Social Emotional Foundations for Early Learning (CSEFEL) defines social and emotional competence as the child's ability from birth through age five to form close and secure adult and peer relationships, self regulate and express emotions in socially and culturally appropriate ways, and explore the environment (Center on the Social Emotional Foundations for Early Learning, 2008). However, Fantuzzo and colleagues (2007) describe

social and emotional development as a set of multi-dimensional skills that include self-regulation, self-concept, self-efficacy and prosocial behaviors with adults and peers. Further, other research teams define social and emotional acquisition as two separate skillsets. That is, social skills are learning behaviors that children develop in early education settings as they explore and navigate unfamiliar contexts, and challenging behavior is the result of skill deficits related to emotional competence (Fox, Hemmeter, Snyder, Binder, & Clarke, 2011; Izard et al., 2008). Despite attempts to delineate the differences across competencies, research addresses the critical need for young children to acquire both social and emotional skills to promote school readiness and later school success (Fantuzzo, Bulotsky-Shearer, McDermott, McWayne, Frye, & Perlman, 2007).

School-Wide Positive Behavior Support (SWPBS) has been implemented in preschool settings to support children's adjustment to the school environment (Benedict, Horner, & Squires, 2007; Duda, Dunlap, Fox, Lentini, & Clarke, 2004; Fox et al., 2011; Stormont, Lewis, & Beckner, 2005). A critical aspect of SWPBS requires that teachers clearly define behavioral expectations to support children's ability to navigate unfamiliar contexts. Behavioral expectations are defined as important rules or behaviors that are developmentally appropriate (Steed & Pomerleau, 2008). Behavioral expectations are also stated in simple and positive language and are typically aligned with classroom routines (Powell, Dunlap, & Fox, 2006). Behavioral expectations, sometimes referred to as classroom expectations, must be explicitly taught, modeled, and reinforced to ensure that all children have an opportunity to learn them (Benedict et al., 2007; Gable, Hester, Rock, & Hughes, 2009; Sandall & Schwartz, 2002). While adherence to behavioral expectations is a social and emotional skill by itself, the ability to adhere or follow through with behavioral expectations requires that children master other specific social and emotional skills. For example, a typical behavioral expectation is for children to clean up

their table after eating a snack. To be able to clean up, children must attend to, and follow, their teacher's instruction. These expectations require children to persist at a task that might be difficult and plan how to complete the task successfully. Important social and emotional skills involved in this process include mastery motivation and executive functioning. Another common behavioral expectation is waiting for a turn to play with a toy or use equipment (e.g., a classroom computer). To be able to wait for a turn to play with a toy or use equipment, children must control the impulse to take the toy and identify other activities they can do while they wait. This requires children to use social and emotional skills such as self-regulation and problem solving. Additional behavioral expectations that involve use of various social and emotional skills include washing hands after using the bathroom, using walking feet in the school hallways, listening to the teacher's instructions, and using an inside voice when in the classroom (Carter & Pool, 2012).

When children do not learn and follow teachers' behavioral expectations, they are at risk for poor school adjustment, academic underachievement, and punitive relationships with teachers (Lane et al., 2003). There are several reasons children may have difficulty adhering to behavioral expectations. First, teachers may not have developed clear expectations and as a result, children may not know the behavioral expectations within a specific setting or across routines and transitions. Second, expectations taught at home and expectations taught in school may differ, which impacts the number of opportunities children have to consistently practice these skills (Hemmeter et al., 2008). Research indicates that children's ability to meet teacher expectations positively impacts their school experience in both academic and social ways (Lang et al., 2007; Walker, Cheney, Stage, & Blum, 2005).

Researchers note that young children living in poverty are more than twice as likely to be at risk for social delays as children in families earning 200% or more above the federal poverty

line (The Children's Defense Fund, 2014). One in five children under the age of five is poor. The more chronic the economic, social, and psychological stressors that young children face, the greater likelihood of poor social, emotional and cognitive outcomes (Fantuzzo, Bulotsky-Shearer, McDermott, McWayne, & Perlman, 2007; Raver & Knitzer, 2002). Therefore, improving school readiness outcomes for young children with and without disabilities who come from economically disadvantaged families is critical as they often enter school with fewer academic and social skills than their more economically advantaged peers (Azzi-Lessing, 2010; Magnuson, Meyers, Ruhm, & Waldfogel, 2004; Winsler, Tran, Hartman, Madigan, Manfra, & Bleiker, 2008). These facts highlight the need to implement effective practices that teach behavioral expectations along with other social and emotional skills to young children thereby improving their school readiness outcomes.

Early childhood programs are encouraged to provide high quality instruction to ensure that young children have the social and emotional skills needed to be successful in kindergarten and beyond. A primary goal of Head Start is to improve school readiness in children from low-income households and children with developmental delays or disabilities (Lee, Zhai, Brooks-Gunn, Han, & Waldfogel, 2014; Magnuson et al., 2004). The Head Start Act of 2007 outlined a strategic plan for improving school readiness for young children with and without disabilities. The effects of early care on children's development have yielded positive results. High quality care and early education predict positive outcomes in key areas of young children's functioning, including self-regulation, academic achievement, and social emotional development (Lipscomb, Pratt, Schmitt, Pears, & Kim, 2013; Magnuson et al., 2004; NICHD Early Child Care Research Network [ECCRN], 2005). One way to address these critical skills is through the implementation

of evidence-based practices. One way to address these critical skills is through the implementation of evidence-based practices. **Evidence-based Practices**

Evidence-based practices are defined as “practices informed by research findings demonstrating a relationship between the characteristics and consequences of a planned or naturally occurring experience or opportunity where the nature of the relationship directly informs what a practitioner or parent can do to produce a desired outcome” (p. 2; Dunst & Trivette, 2008). Evidence suggests that high quality preschool programs have a positive effect on young children including self-esteem, motivation, and social behavior (Barnett, Jung, Youn, & Frede, 2013; Boyd, Barnett, Leong, Bodrova, & Gomby, 2005; Schweinhart, Barnes, & Weikart, 1993; Schweinhart & Weikart, 1997).

Despite the success of these preschool programs, there has been a continual gap between findings from research on effective interventions and the implementation of these intervention programs and services, particularly those received by vulnerable populations who could benefit from evidence-based interventions (Buysse, Wesley, Snyder, & Winton, 2006; Metz & Barley, 2012). Within the last few decades, a push to develop high quality preschool programs that use evidence-based practices has been the focus in the field of early childhood (Buysse & Wesley, 2006). Following in the footsteps of medical and health-care professionals, evidence-based practice uses science to discover the most effective interventions or strategies to improve outcomes for young children (Buysse et al., 2006; Odom, Brantlinger, Gersten, Horner, Thompson, & Harris, 2005; Odom, Cox, & Brock, 2013). Fortunately, there is evidence in the special education literature that teachers can be successfully taught to use recommended practices or research-based practices to support the social competence of young children (Artman-Meeker & Hemmeter, 2013; Fox, Hemmeter, Snyder, Binder, & Clarke, 2011;

Fullerton, Conroy, & Correa, 2009; Webster-Stratton, Reid, & Stoolmiller, 2008). **Tiered Models of Support**

The Pyramid Model is a comprehensive approach that addresses the social and emotional development of children in early childhood settings (Hemmeter et al., 2006). This tiered model promotes the use of universal strategies, secondary supports, and tertiary or intensive individualized interventions. Similar to SWPBS, the Pyramid Model is a tiered approach that promotes practices that are evidence-based and that can be implemented to support appropriate social and emotional skill development (Fox et al., 2003; Hemmeter, Fox, Jack, & Broyles, 2007; Horner & Sugai, 2000; Horner, Sugai, & Anderson, 2010; Stormont, Lewis, & Beckner, 2005). Most importantly, strategies highlighted within the Pyramid Model support the social and emotional competence of children from a variety of backgrounds including children who live in poverty and children with disabilities (Hemmeter et al., 2006).

Tiered models provide a continuum of supports that can be implemented at different levels. For example, the Pyramid Model includes three levels of support. The bottom level addresses building positive relationships with children, families, and colleagues, as well as the importance of making changes to the physical environment to support the social and emotional development of all children in early childhood settings (e.g., routines, transitions, engaging activities, clear expectations). Additionally, this level addresses implementation of behavioral expectations across routines and transitions to support young children's ability to successfully navigate their learning environment. The second level addresses implementation of targeted social and emotional strategies (e.g., friendship, labeling and discriminating emotions) for children who are at-risk for challenging behavior and need skill development (i.e., children with disabilities, children with communication difficulties). Finally, the third level requires a set of

intensive and individualized practices that meet the needs of approximately 5% of the students in a classroom or program who engage in persistent challenging behavior (Fox et al., 2003). These strategies across tiers are most effective when skills are targeted in the context where behavioral expectations are clearly defined (Carter & Pool, 2012; Stormont et al., 2005).

As the number of young children with a variety of abilities and from diverse backgrounds enter early childhood programs increases (Kena et al., 2015), it is important to consider effective class-wide practices that address children's social and emotional skills specifically, targeting children's learning and adherence to behavioral expectations. Further, considering the negative effects that poor social skill and emotional development has on young children's long-term development, particularly for children with disabilities and children who live in poverty, it is even more critical to examine the impact of class-wide approaches to teach behavioral expectations (Carter & Norman, 2010; Carter & Pool, 2012). A tiered model of support can address the need for high quality teaching and use of evidence-based practices to support children's adherence to behavioral expectations in Head Start settings.

Within a tiered model, there are strategies that can be utilized to teach behavioral expectations to young children, including social stories¹ (Gray & Garand, 1993). Social stories have been implemented with individual children with a range of abilities including children with Autism Spectrum Disorders (ASD; Delano & Snell, 2006; Hsu, Hammond, & Ingalls, 2012; Norris & Datillo, 1999; Price, Ostrosky, & Santos, 2015; Swaggert et al., 1995; Wong et al., 2014). To date, there are no outcome data that documents the impact of social stories when implemented with groups of children as a universal approach to teach behavioral expectations.

¹ Hereafter, "social stories" and "scripted stories" are used interchangeably. The term "scripted stories" is used in Chapter 3 to account for modifications made to the "social stories" procedures.

Social stories have the potential to benefit a wider variety of children with and without disabilities as they learn behavioral expectations. As such, there is a need to evaluate the use of this strategy in early childhood settings as a class-wide approach. The purpose of this study was to examine the impact of a class-wide multi-component intervention (i.e., scripted stories, role play, and prompts) to teach behavioral expectations to young children.

Chapter 2

Literature Review

The literature was reviewed to examine studies that have included class-wide interventions to teach behavioral expectations to young children. Although no studies were identified that focused solely on teaching behavioral expectations to young children, studies that focused broadly on effective social and emotional interventions were included. These studies provide pertinent information that can be used to build a case for class-wide interventions that teach behavioral expectations focused specifically on routines and transitions in early childhood contexts. Gaps, limitations, and future research are discussed.

Seven online databases were searched (i.e., Scopus, LexisNexis Academic News, JSTOR, Web of Science, PsychInfo, ERIC, and EBSCO) using the following keywords and descriptors: *class-wide, classroom, preschool, early childhood, interventions, social and emotional, behavior expectations, learning behavior expectations, following rules, classroom expectations, and routines*. The *Journal of Applied Behavior Analysis (JABA)* was also searched using three descriptors: *behavior expectations, learning rules in preschool, and rules*. Following the online database search, a hand search was conducted that included the reference lists from key articles about the use of class-wide interventions to address the social and emotional development of young children. The following inclusion criteria were used to identify peer-reviewed articles for this literature review: (a) the intervention was implemented class-wide; (b) the classroom intervention did not also include a home-based component that included data collection; (c) target participants were between the ages of 3 and 5 years; (d) the study was published between 1994 and 2014; (e) the intervention only targeted social and emotional skills and behavioral

outcomes; and (f) child outcome data were presented. Dissertations and studies conducted outside the United States were not included. The following questions guided this review:

1. What population of young children (e.g., disability) participated in the intervention?
2. Where did the intervention take place (e.g., urban, rural, suburban)?
3. What research design was used to examine the effectiveness of the class-wide intervention?
4. What social and emotional skills and/or behavioral expectations were targeted?
5. What strategies were used in the class-wide interventions?
6. How effective was the intervention in addressing the targeted social and emotional skills?

In the last 40 years, interventions addressing children's social and emotional skills have been implemented in early childhood settings to explicitly teach pro-social skills and increase social competence (Joseph & Strain, 2003). Several researchers have demonstrated success with addressing social and emotional development as a universal approach which involves the implementation of an intervention for all children in a classroom setting (Conroy, Sutherland, Vo, Carr, & Ogston, 2014; Denham & Burton, 1996; Domitrovich, Cortes, & Greenberg, 2007; Lynch, Geller, & Schmidt, 2004; Serna, Nielsen, Lambros, & Forness, 2000; Vo, Sutherland, & Conroy, 2012). While many studies indicate successful outcomes when interventions that focus on social and emotional skills have been implemented to support the behavioral needs of children with limited social skills (c.f., Daunic et al., 2013; Kamps, Kravits, Rauch, Kamps, & Chung, 2000; Reid, Webster-Stratton, & Hammond, 2003; Walker, Kavanaugh, Stiller, Golly, Severson, & Feil, 1998), only nine studies met the criteria for this literature review (Denham & Burton, 1996; Domitrovich et al., 2007; Hanley, Heal, Tiger, & Ingvarsson, 2007; Izard et al., 2008; Lynch et al., 2004; Serna et al., 2000; Shure, 2001; Stormont, Smith, & Lewis, 2007; Vo et al., 2012). See Appendix A for a matrix highlighting key variables of these nine studies.

Participants

Across the nine studies, 1,329 students, 27 teachers, and 4 student teachers participated in the implementation of a variety of social and emotional intervention programs. These participants are described in detail in the following sections.

Child participants. The average age for child participants was 4 years (range = 3 to 5 years). While four studies included only preschool children in their sample (Domitrovich et al., 2007; Izard et al., 2008; Lynch et al., 2004; Serna et al., 2000), five studies included both preschool and kindergarten age children in their sample (Denham & Burton, 1996; Hanley et al., 2007; Shure, 2001; Stormont et al., 2007; Vo et al., 2012). Lynch et al. (2004) included the largest sample of children in their study ($n = 399$), while Hanley et al. (2007) included the smallest sample ($n = 16$). Moreover, while all nine studies provided information on the number of child participants, only seven studies provided data on the gender and/or ethnicities of the participants (Domitrovich et al., 2007; Hanley et al., 2007; Izard et al., 2008; Serna et al., 2000; Shure, 2001; Stormont et al., 2007; Vo et al., 2012). Of those seven studies, 33% of participants were African American, 15% were Caucasian, 8% were Latino, less than 1% each were Native American, Asian, and Pacific Islander, 3% were of another ethnic minorities, and 1% of participants did not identify their ethnicities. Across the seven studies, 37% of the participants were boys, 44% were girls, and 22% did not identify the children's gender. Two studies included children with disabilities (i.e., non-specified developmental delays, identified language disability; Hanley et al., 2007; Stormont et al., 2007). One study included a participant who received services for learning English as a second language (Stormont et al., 2007).

Teacher participants. Four studies included teachers as participants (Denham & Burton, 1996; Hanley et al., 2007; Stormont et al., 2007; Vo et al., 2012). For these studies, teacher

education ranged from a high school diploma (which included coursework in child-care) to a Masters degree. However, Hanley et al. (2007) reported that participants in their study were student teachers who were supervised by certified teachers as part of their practicum. Only one study indicated that participants' Bachelors and Masters degrees were in early childhood education or a related field (Denham & Burton, 1996). Teachers' years of experience with young children in child-care settings ranged from 3 to 34 years. Not surprisingly, all teacher participants were women. Stormont et al. (2007) indicated that all teacher participants were Caucasian. Vo et al. (2012) provided detailed information on the ethnic makeup of their teachers (50% Caucasian, 40% African American, 10% Latino). Denham and Burton (1996) only indicated that five of the seven teachers who participated in their study were of culturally, ethnically, and linguistically diverse backgrounds. **Settings**

The nine studies were conducted in a variety of settings. While none of the authors indicated whether classrooms were full day or half day, all interventions occurred in classrooms. Most of the studies were conducted in Head Start and other community-based preschool or child-care settings. Four research teams reported the programs were located in urban, suburban, and rural environments (Domitrovich et al., 2007; Izard et al., 2008; Lynch et al., 2004; Serna et al., 2000). One study was conducted in the suburbs of a large metropolitan area where preschool centers were private but provided subsidized care to families in need. One research team implemented a study in a university-based preschool classroom that served neighborhood children who were also considered "high-risk." This classroom also served children of students and employees affiliated with the local university (Vo et al., 2012). Three research teams did not provide information on whether or not their setting was located in an urban, suburban or rural environment (Hanley et al., 2007; Shure, 2001; Stormont et al., 2007). **Research Design**

Seven studies used quasi-experimental or experimental group designs as the primary methodology to examine the effectiveness of the social and emotional interventions. Two studies implemented single case design methodology (Hanley et al., 2007; Stormont et al., 2007). While five studies included a control group, which is one of the gold standards for clinical trials, only three of these studies reported systematic randomization of participants (Domitrovich et al., 2007; Izard et al., 2008; Lynch et al., 2004). For two of the studies (Denham & Burton, 1996; Vo et al., 2012), the absence of a control group highlights the non-experimental nature of these studies. As such, results from these two studies should be interpreted with caution as changes in student behaviors cannot be directly linked to implementation of the intervention. **Dependent Variables**

Interventions were implemented to teach social and emotional skills to children. Across all nine studies, targeted behaviors included: building positive relationships with teachers and peers, understanding and regulating feelings and/or emotions, increasing positive social interaction, managing anger, using self control, following directions, sharing, problem solving, and complying with rules (Denham & Burton, 1996; Domitrovich et al., 2007; Hanley et al., 2007; Izard et al., 2008; Serna et al., 2000; Shure, 2001; Stormont et al., 2007; Vo et al., 2012). Dependent variables were measured using behavior checklists (i.e., Minnesota Preschool Affect Checklist, the Emotion Regulation Checklist, the Early Screening Project), rating scales (i.e., Teacher Report of Child Coping, Preschool Competence Questionnaire, the Emotion Expression Rating Scale, the Caregiver-Teacher Report Form, the Adaptive Behavior Scale, the Maladaptive Behavior Scale, The Vineland Screener, Child Behavior Rating Scale-20, the Teacher Report of Child Coping, vocabulary tests [i.e., Peabody Picture Vocabulary Test-Third Edition]), and observational methods. **Intervention Strategies**

All research teams implemented intervention packages and/or curriculums that addressed social and emotional development for all children in the targeted classrooms. Across all studies, seven strategies were used to teach social and emotional skills. Strategies included: role play, modeling, pre-corrective and praise statements, creative arts, interactive games, home-school communication efforts, and storybooks. The researchers used these strategies to target children's social skills and to reinforce children's acquisition of skills throughout the intervention time period.

Three research teams used role play as part of an intervention package to help children learn specific social and emotional skills (Hanley et al., 2007; Lynch et al., 2004; Serna et al., 2000). Based on descriptions provided across studies, role play was defined as acting out specific targeted skills with peers, teachers, or puppets. In two studies role play strategies were implemented to help children learn problem-solving and friendship skills, practice prosocial behaviors, make healthy choices, and follow instructions (Hanley et al., 2007; Lynch et al., 2004; Serna et al., 2000). Role play strategies also were used to help children learn how to express their feelings appropriately, accept differences, establish and maintain social relationships, brainstorm ideas, and demonstrate self-control (Lynch et al., 2004). One research team indicated that role play strategies involved children acting out skills with one another using characters in a story or real-life scenarios (Serna et al., 2000). Specifically, children were expected to act out skills needed to solve a problem. They were expected to perform the skills to mastery. Variations in role play included the use of puppets to demonstrate appropriate social and emotional skills. For example, puppets were used to model and reinforce skills that children learned throughout the day (Lynch et al., 2004). Also, teachers used puppets to describe behavioral expectations, teach

sharing behaviors and following directions, and to discourage the use of violence, drugs, and alcohol (Lynch et al., 2004; Serna et al., 2000).

One research team implemented modeling as a strategy to support the development of social skills in young children (Hanley et al., 2007). This intervention was implemented during morning group time in an inclusive early childhood classroom. The lead teacher described the target skill (i.e., saying “thank you”) and modeled the skill for the children. Children also had the opportunity to practice the skill (i.e., role play) with one different teacher. If children did not use the target skill correctly, the teacher described the skill again and provided the child with an additional opportunity to perform the skill. If children used the target skill correctly, the teacher provided descriptive praise. Children were provided with additional opportunities to practice the target skill across settings (i.e., meals, transitions, free play).

Another research team implemented descriptive praise as a key component (Stormont et al., 2007). Teachers were trained to use universal features of Positive Behavior Intervention Support (PBIS) to decrease problem behavior in children. These universal features included the use of precorrection (i.e., teachers reminding students of behavioral expectations) and praise statements during small group activities. Precorrection and praise statements were implemented as antecedent strategies to decrease students’ problem behavior. Strategies helped to remind children of the academic and social expectations for the group activity. Teachers were trained on the praise strategies prior to implementation with children during small group activities.

Another strategy implemented was the use of creative arts (i.e., song and/or music, movement, visual art) in three studies (Lynch et al., 2004; Serna et al., 2000; Shure, 2001). In one study, skills were embedded in a song format, which allowed children to have additional opportunities to learn targeted social and emotional skills (Serna et al., 2000). Songs and/or

music and movement also were used with puppets to teach: (a) following directions; (b) sharing; and (c) problem solving. In another study, 12 original songs were set to music across a variety of musical genres (i.e., reggae, pop, rap, and country). These songs addressed the main skills of the intervention program and served as another tool to teach social and emotional skills (Lynch et al., 2004). Specific examples of how songs were used to teach social and emotional skills were not provided. In the third study, movement was used to help children learn vocabulary concepts such as, “same” and “different,” and to develop their problem solving abilities (Shure, 2001). One research team used art projects as a generalization context for the social and emotional concepts across the curriculum (Domitrovich et al., 2007). Specific examples of these art projects were not provided.

In two studies, interactive games were utilized as a strategy within a larger curriculum to support children’s social and emotional skills (Domitrovich et al., 2007; Izard et al., 2008). Interactive games involved children answering questions and prompts with their peers. Games were used to facilitate discussion about targeted social and emotional skills and how to use these skills in the classroom. For example, children were given an opportunity to label various emotions. With their peers, children compared different emotions and different intensities of emotions. Children drew expressions of emotions and shared these with their classmates. Also, during lessons teachers asked children questions about their emotions (i.e., “What makes you feel sad?”). Through such games, children learned about differences in emotions. One research team used group games as a strategy for generalizing the targeted concepts through extension activities. Specific details about how this strategy was implemented were not given. However, the purpose of the study was to help teachers embed instruction across different activities to facilitate children’s learning of social and emotional skills (Domitrovich et al., 2007).

Four research teams included home and school communication (Izard et al., 2008; Lynch et al., 2004; Serna et al., 2000; Vo et al., 2012) as a strategy to improve problem behaviors by collaborating with parents to ensure that skills taught in school were reinforced at home. Home and school communication also was implemented to strengthen relationships between caregivers and teachers. Information on the intervention and behavior specific strategies were provided to parents (Lynch et al., 2002; Vo et al., 2012). In one study, parents were provided with a copy of the storybook that was used during intervention in the classroom. The storybook addressed prosocial behaviors for children to use in their home environments (Serna et al., 2000). In a final study, weekly notes about the social and emotional intervention were sent home to caregivers (Izard et al., 2008). Researchers did not provide detailed information on the content of these notes.

Although three research teams (Domitrovich et al., 2007; Izard et al., 2008; Serna et al., 2000) used some elements of a storybook format to teach social and emotional skills to young children, only one research team used stories to teach targeted social and emotional skills (Serna et al., 2000). These stories focused on self-determination skills and addressed following directions, sharing, and problem solving. These skills were embedded in the stories with music and embellished with animal characters. All stories focused on the aforementioned skills were formatted in the following way: (a) the major character was introduced; (b) the problem was identified; (c) the skill steps were outlined; and (d) the problem was solved using a particular social and emotional skill. Another study focused on the story content that provided children with an understanding of the consequences of uncontrolled anger (Izard et al., 2008). These stories focused on feelings of sadness and learning to help friends who were sad.

Although teachers were trained to implement a social and emotional intervention in all nine studies, only four teams of researchers provided information on fidelity of implementation. Methods and measures varied across these four studies (Denham & Burton, 1996; Domitrovich et al., 2007; Izard et al., 2008; Vo et al., 2012). In one study, teachers were asked to report on their completion of intervention activities yet data were not provided on these outcomes (Denham & Burton, 1996). In another study, a staff supervisor who was designated as the intervention coordinator provided fidelity information using a rating scale. Overall level of implementation was reported as high (Domitrovich et al., 2007). Vo et al. (2012) provided teachers with a 12-item checklist to indicate what elements of the intervention they implemented. According to the researchers, teachers' adherence to the intervention components increased across time, however specific data were not reported. In the final study, teachers participated in biweekly fidelity checks as researchers observed them and assessed fidelity for teaching techniques and lesson content (Izard et al., 2008). While Izard et al. reported that higher fidelity percentages predicted greater gains in participants' acquisition of social and emotional skills, specific data on implementation fidelity were not provided to support this claim. **Measures** Notably, many of these studies relied on behavior checklists, rating scales, and observational methods to measure behavior change in the absence of appropriate and systematic reliability and validity procedures (Conroy, Stichter, Daunic, & Haydon, 2008; Lynch et al., 2004). Of the nine studies, four studies used rating scales to report behavior change that were completed by classroom teachers (Domitrovich et al., 2007; Lynch et al., 2004; Serna et al., 2000; Shure, 2001), and for one study it was unclear who recorded data on behavior observations (Vo et al., 2012). One study used a rating scale and an observational checklist completed by classroom teachers to report behavior change (Denham & Burton, 1996). Shure et al. (2001) also used behavioral

checklists with limited evidence of test-retest-reliability. Two studies only used observational methods (Hanley et al., 2007; Stormont et al., 2007). A final study used a combination of standardized assessments, behavior checklists, and observational methods (Izard et al., 2008). Teacher ratings are not the most reliable method for collecting data on teacher beliefs about change in student behavior as discrepancies in data collection can be impacted by a variety of factors (e.g., context for assessment, presence of researcher, information available to informants; Achenbach, 2011). If teacher ratings are used, other behavior change data should be collected to corroborate the findings, as well as gathered information from multiple informants (Renk, 2005). Lynch et al. (2004) suggested incorporating objective measures for teacher reports such as school discipline referrals, fidelity of implementation, and analysis between teacher change and child outcomes. **Efficacy of Interventions**

Across the nine studies, results suggest improvement in children's social and emotional skills. Specifically, researchers observed a decrease in negative emotions or inappropriate behavior for children in experimental groups when compared to children in control groups. For participants in one study, maintenance of appropriate social and emotional skills was reported after 6 months, as well as improvement in other social and emotional skills associated with the targeted skills (Shure, 2001). Izard et al. (2008) noted that an emotion based intervention program led to a greater increase in emotion knowledge, emotion regulation, and positive emotion expression and social competence for children in six Head Start programs when compared to children's understanding of emotion knowledge and emotion regulation in the control group. More specifically, an increase in children's emotion knowledge mediated the effects of emotional regulation. Children who understood the different ways to express their emotions could easily detect the feelings and intentions of others as measured by teacher rating

scales. Increased emotion knowledge led to an increase in emotion expression, feeling, and function. It is important to note, however, that this intervention program has a low level of evidence based on analysis of the quality indicators for effective studies as evaluated by Barton, Sneed, Strain, Dunlap, Powell, and Payne (2014).

For seven studies that used group design methodology, incremental gains in pre and post test scores for children in the experimental groups were consistent across the studies regardless of strategies used (Denham & Burton, 1996; Izard et al., 2008; Lynch et al., 2004; Serna et al., 2000). In one study (Izard et al., 2008), participants made similar gains in their emotion knowledge when compared to other studies that examined emotion knowledge using similar strategies (i.e., interactive games; Domitrovich et al., 2007). Shure (2001) demonstrated gains in the social and emotional development of preschool children where less than half of the participants were rated as “behaviorally adjusted” prior to treatment. After treatment, more than half of participants were rated as “behaviorally adjusted.” The most compelling results of the impact of a social and emotional intervention were demonstrated by Vo et al. (2012) who implemented performance feedback as a strategy. These researchers reported a significant increase in child outcomes in the area of social competence, and significant decreases for externalizing behavioral problems and internalizing behavioral problems.

Serna et al. (2000) reported significant improvements in children’s adaptive behaviors, social interaction, and attention using storybooks as a primary intervention. Children in the experimental group who were at risk for the development of emotional or behavioral disorders showed improvement in their mental health functioning. Although this intervention shows promise for improving the social and emotional skills of young children (Barton et al., 2014), a

limitation to this study was that observational data were not collected. Thus, the use of independent observational methods to measure child behaviors in the classroom is needed.

Notably, two studies implemented single case methodology and reported a functional relationship between independent and dependent variables (Hanley et al., 2007; Stormont et al., 2007). Stormont et al. (2007) demonstrated a functional relation between teacher behavior and students' problem behavior. Specifically, these researchers noted a relation between teachers' use of key features of PBS and a reduction in students' problem behavior in a small group setting. Teachers substantially increased their use of precorrective statements and use of specific behavioral praise that led to a reduction in problem behavior. Hanley et al. (2007) demonstrated an increase in preschool skills (i.e., following directions, friendship skills, tolerance for delay, functional communication) and a reduction in problem behavior. Participants demonstrated the greatest improvement in requesting assistance, requesting attention, making requests, tolerating a delay, and comforting others in distress. Interestingly, skills such as following instructions and saying "thank you" showed less improvement because children previously demonstrated higher rates of skill use at baseline. **Gaps and Limitations**

Several gaps and limitations in the literature should be highlighted. First, across the nine studies included in this review, only three research teams provided social validity data (Hanley et al., 2007; Shure, 2001; Stormont et al., 2007). Interestingly, a few research teams that did not collect social validity data demonstrated low and medium levels of evidence for the quality of their study (Barton et al., 2014; Domitrovich et al., 2007; Izard et al., 2008; Serna et al., 2000). Social validity data provide guidance on whether an intervention is socially significant or relevant for direct consumers (e.g., participants in the study), as well as indirect consumers (e.g.,

teachers and parents; Horner, Carr, Halle, McGee, Odom, & Wolery, 2005; Wolf, 1978).

Researchers should be intentional when planning for and gathering social validity data.

Secondly, while research teams implemented group design methodology (i.e., quasi-experimental, experimental, within subject), subtle changes in behavior in response to an intervention are not easily detected. Several research teams reported no change in participant behavior for their dependent variables (Domitrovich et al., 2007; Izard et al., 2008; Serna et al., 2000). For example, although Serna et al. (2000) indicated decreases in defiant behavior for their treatment group, significant differences were not evident. Similarly, Domitrovich et al. (2007) did not show improvement in inhibitory control and sustained attention (i.e., executive functioning) for their participants. These researchers note the low intensity of the intervention and problems with measures used to assess executive functioning as possible concerns. As a result, Domitrovich et al. advocate for direct observations of child behavior, as opposed to using teacher ratings.

Another gap within the class-wide social and emotional intervention literature is a failure to implement true experimental designs. Two studies did not include a control group (Denham & Burton, 1996; Vo et al., 2012), and only three studies reported systematic randomization of participants (Domitrovich et al., 2007; Izard et al., 2008; Lynch et al., 2004). Without these critical aspects of group design one cannot adequately determine if changes in student behavior were due to implementation of the intervention or due to other variables. Other limitations include a failure to collect fidelity of implementation data (Hanley et al., 2007; Lynch et al., 2004; Seifer et al., 2004; Stormont et al., 2007), and inter-observer agreement data on dependent measures (Serna et al., 2000).

A final gap in the literature is a need for intervention studies to evaluate adherence to behavioral expectations specifically for routines and transitions in early childhood classrooms. Only three studies (Hanley et al., 2007; Serna et al., 2000; Stormont et al., 2007) included behavioral expectations as dependent variables. These behavioral expectations included following directions or rules, and not interrupting peers or teachers (i.e., waiting). Other studies in this review focused on challenging behavior (i.e., yelling, spitting, hitting, etc.) and social emotional skill building (i.e., increasing emotion vocabulary, developing friendship skills, regulating/managing emotions, and solving problems). A critical aspect of young children's social and emotional development focuses on how well they adapt to routines and transitions; thus, children new to early childhood environments, and children with special needs, may have difficulty navigating these important aspects of social functioning. As such, it is important to examine class-wide interventions that support young children's adherence to classroom expectations during routines and transitions. **Recommendations for Future Research**

Future research in early childhood should continue to investigate class-wide interventions that support social and emotional development. As only three studies focused on behavioral expectations such as following directions or rules, and not interrupting peers or teachers (i.e., waiting; Hanley et al., 2007; Serna et al., 2000; Stormont et al., 2007), additional studies should be conducted to teach behavioral expectations during routines and transitions. Researchers have found that social and emotional interventions implemented class-wide were more effective when implemented earlier in time (i.e., preschool, kindergarten; January, Casey, & Paulson, 2011). As such, researchers cannot ignore the importance of evaluating social and emotional interventions implemented with younger children. Notably, Serna et al. (2000) highlighted how a universal intervention minimizes the effects of labeling that is often associated with mental health or

special education referrals. Further, researchers suggest a need for the increased use of evidence-based practices to support appropriate classroom behaviors in applied settings (Kamps et al., 2011). This includes the implementation of social stories as a universal approach.

Social stories are a story-based intervention that has recently been established as an evidence-based practice for children with Autism Spectrum Disorders (ASD; Wong et al., 2014). While a majority of participants in the social story literature are between the ages of 6 and 11 years, preschool-aged children (i.e., 3-5 years) also participated in a number of studies. Targeted skills addressed in social stories have included a focus on school readiness, play, social skills, self-help, challenging behavior, and communication skills (Chan et al., 2011; Wong et al., 2014). Social stories are constructed to highlight appropriate behaviors for specific social situations. Additionally, social stories have been shown to help children learn routines and tasks, as well as academic skills (Gray & Garand, 1993; Reynhout & Carter, 2006). Social story interventions have been introduced in a variety of settings, including home (Burke, Kuhn, & Peterson, 2004; Kuoch & Miranda, 2003; Pasiala, 2004) and school (Chan & O'Reilly, 2008; Crozier & Tincani, 2005, 2007; Schneider & Goldstein, 2009, 2010; Wright & McCathren, 2012). Within recent years, music therapists have implemented social stories with musical melodies (Brownell, 2002; Pasiali, 2004). Additionally, social stories have been introduced with media and/or technology (Chan et al., 2011; Hagiwara & Myles, 1999; Mancil et al., 2009), and as part of multi-component intervention packages (Burke et al., 2004; Chan & O'Reilly, 2008; Schneider & Goldstein, 2010).

Social story interventions have been used primarily to decrease challenging behavior and increase appropriate behaviors. Specific challenging behaviors included: inappropriate vocalizations, cursing, screaming, yelling, throwing objects, refusal, name calling, waking during

the night, refusing to go to bed, and destruction of property. Most studies have investigated the implementation of social stories to decrease challenging behaviors, however a few social story interventions were implemented to increase the appropriate use of social skills such as making eye contact, appropriately sitting, working independently, appropriately raising one's hands, and sharing materials. A matrix highlighting social story interventions for young children is provided in Appendix B.

Even with some promising outcomes for young children, social stories have not been implemented as a class-wide intervention to address behavioral expectations (Wong et al., 2014). Three studies reviewed in this chapter included stories as a strategy to improve social and emotional intervention (Domitrovich et al., 2007; Izard et al., 2008; Serna et al., 2000). However, given the limited information about the story format, it is impossible to discern if these stories were written as social stories, or were simply books that focused on social emotional content. While it has applications across all three tiers, social stories were originally developed as a Tier III strategy to address the inappropriate behavior of children with ASD. As this intervention has demonstrated modest effects in the literature, it can be argued that social stories may not be powerful enough to implement as an intensive intervention for children with serious behavioral concerns. However, the efficacy of social stories as a preventive strategy to address universal behavioral concerns of early childhood teachers should be studied further.

Single case methodology is an important methodology to consider for several reasons. First, subtle changes in behavior may not be detected through group design methodology and may be appropriately discerned through visual analysis, which is a critical feature of single case design. Second, an important attribute of single case design is its flexibility and adaptability. If a participant does not respond to an intervention, the intervention can be manipulated or

individualized while continuing to assess the dependent variables. That is, non-responders might ultimately be considered responders under particular conditions. Single case design also affords researchers an opportunity to provide detailed and systematic documentation of the characteristics of those cases that responded to an intervention and those who did not (i.e., non-responders). Third, single case design is widely used in applied and clinical disciplines in psychology and education (Kratochwill et al., 2010). Shaped by research questions and objectives, single-case design plays an important role in establishing evidence-based practices in special education (Horner et al., 2005). Finally, single case methodology is appropriate for evaluating the impact of systematic interventions on small samples of children (i.e., children with disabilities). As several research teams noted the importance of highlighting change in behavior over a period of time (Denham & Burton, 1996; Serna et al., 2000; Vo et al., 2012), using single case methodology to evaluate social and emotional interventions as a universal approach for young children warrants continued investigation. **Purpose of Study**

The purposes of this study were: (a) to provide a relatively low-cost, multi-component intervention for children in Head Start who might respond to a universal, preventive approach to teach behavioral expectations; (b) to train teachers to use evidence-based procedures with fidelity; (c) to address the gaps in the class-wide literature with regard to maintenance and social validity; and (d) to address the gaps in the literature with class-wide social and emotional interventions with young children by collecting observational data.

The following research questions guided this study:

1. Is there a functional relation between the implementation of a multi-component intervention and adherence to behavioral expectations for young children?
2. To what extent can teachers implement evidence-based strategies with fidelity?

Chapter 3

Methodology

Recruitment of Participants

Teachers. Participants were recruited from four Head Start classrooms in two different buildings in a small Midwestern community. The researcher contacted the Child Development Service Manager who identified potential teachers. The researcher met with interested teachers to provide details about the study and to get their input on potential target participants. Structured interviews were conducted with all teachers to identify problematic routines and transitions for possible target participants. Although the researcher did not employ a systematic inclusion criteria for teacher participants, information gathered from the interviews helped to identify teacher training needs. Seven teachers and four paraprofessionals ($n = 11$) were recruited and consented to participate in the study.

Children. The researcher observed 17 children in their problematic settings and routines for a minimum of four observations each. Observational data were collected on each participant to confirm anecdotal data provided by the child's teacher. Finally, eight preschoolers were identified for participation in this study, however, caregivers of only four children consented for their preschoolers to participate. In addition to target children, consent was requested for all children in each classroom because the researchers planned to collect behavioral data on peers. Consent letters were sent to children's primary caregivers in English, and in Spanish for two of the families. Sixty non-target participants were approached to participate in the study; however, only 31 consent letters were returned for these participants (52%). See Table 1 for details on recruitment results.

Table 1

Recruitment Results

Classroom	Student enrollment	Child participants target/recruited	Non-target participants consented/recruited	Teachers consented/recruited
Butterfly	17	1/2	10/15	3/3
Swan	16	1/2	0/14	3/3
Turtle	16	1/2	10/14	2/2
Bumblebee	19	1/2	11/17	3/3

Compensation for Participation

Following completion of data collection, each of the four target children received two children’s books as compensation for participating in the study. Each teaching team ($n = 4$) received \$50.00 worth of classroom toys purchased in appreciation for their time. For each teacher training session, the researcher purchased lunch and/or breakfast. She also purchased continental breakfast for Head Start administrators and teachers four times throughout the duration of the study. As an additional service to Head Start, the researcher provided support (i.e., problem solving techniques, drafted additional scripted stories) for teachers who had difficulty addressing the challenging behavior of children who were not affiliated with the study.

Teacher Participants

Four teaching teams (i.e., teachers, paraprofessionals), which included a total of 11 teachers, participated in the study. With the exception of one male participant (Donald), all teachers were female. Additionally, all teachers spoke English, with the exception of Maria who was bilingual (Spanish/English). Five teachers were Caucasian, four teachers were African

American, and one teacher was Hispanic/Latina. Teachers' ages ranged from 25 to 55+ years. Teachers' education ranged from some college coursework to a Master's degree in an education related field (e.g., early childhood education, elementary education, social work, psychology). Four teachers had taken some college coursework, one teacher had earned an Associate's degree, five teachers obtained a Bachelor's degree, and one teacher had a Master's degree. Teachers' years of experience with young children ranged from 1 to 25+. Two teachers reported having between 1 to 5 years of experience; four teachers reported having between 6 to 9 years of experience; one teacher reported having 10 to 14 years of experience; three teachers reported having between 15 to 24 years of experience; and one teacher reported having more than 25 years of experience. Teachers' years of experience specifically with Head Start population ranged from 1 to 24 years. Six teachers reported having 1 to 5 years of experience; four teachers reported having between 6-9 years experience; and one teacher reported having 15 to 24 years of experience. All teachers agreed to complete all requirements for the study and maintained a satisfactory level of attendance throughout the duration of the study. See Table 2 for teacher demographics.

Settings

Head Start serves the needs of young children (i.e., 3 to 5 years old) from families who live in poverty (as defined by 130% at or below the federal poverty level) by providing health, preschool education, and social services. When this study was conducted, the Head Start locations were open from 7:30 a.m. until 5:30 p.m. each weekday. The classrooms were inclusive early childhood classrooms with no more than two children with Individual Education Plans (IEPs) per room. Each preschool classroom had both carpeted and tiled areas. Children had

Table 2

Teacher Demographics

Name	Team / class	Age	Ethnicity	Highest degree	Field	Years of experience	Head Start years of experience
Brittany	Butterfly	46-55	Caucasian	Bachelor's	ECE	15-24	6-9
Rebekah	Butterfly	25-35	Caucasian	Associate	ECE	10-14	6-9
Nancy	Butterfly	36-45	Caucasian	Some college coursework	N/A	15-24	1-5
Alice	Swan	36-45	African American	Master's	Education	6-9	1-5
Elizabeth	Swan	55+	African American	Bachelor's	Psychology	6-9	6-9
Lakiesha	Swan	25-35	African American	Some college coursework	N/A	1-5	1-5
Donald	Turtle	25-35	African American	Some college coursework	N/A	6-9	1-5
Chrissy	Turtle	25-35	Caucasian	Bachelor's	ECE	6-9	1-5
Lacy	Bumblebee	46-55	Caucasian	Bachelor's	ECE and EE	15-24	6-9
Maria	Bumblebee	25-35	Hispanic/ Latino	Bachelor's	ECE; Social Work	25+	15-24
Denice	Bumblebee	46-55	African American	Some college coursework	N/A	1-5	1-5

Note. Early Childhood Education = ECE; and EE = Elementary Education

access to child-sized furniture including wooden cubbies for their belongings. Each classroom had at least three tables for children to sit at and have their meals. The carpeted area was designated for circle time and reading books. Areas for children to play (i.e., housekeeping, block, and art) were sectioned off with small shelves. Teachers implemented parts of the intervention (social story and role play to be described later) on the carpet area designated for circle time.

Classrooms

To collect demographic information on the four classrooms, teachers were asked the following questions: How many children are currently on your class roster? How many children demonstrate challenging behavior? How many children have a behavioral plan? How many children have identified disabilities? What was the first day of school (i.e., start date) for the target participant(s)? The first classroom selected for participation (Butterfly) was a half-day classroom with two lead teachers and a paraprofessional. Children attended preschool from 8:00 a.m. until 11:30 a.m. Seventeen children were enrolled in this classroom. Although no children were identified as having a disability, one child was being evaluated for a developmental delay. He was the target participant for this study. Teachers in this classroom reported that three students had behavioral plans and that at least half of their students demonstrated challenging behavior. The second classroom (Swan) was a part-day classroom where 16 children attended preschool from 8:00 a.m. until 11:30 a.m. A lead teacher and two paraprofessionals were present in this classroom. Teachers reported that three students had behavioral plans (which included a target participant) and that at least five students demonstrated challenging behavior. The target participant for this classroom was identified as having developmental delays due to the effects of

Fetal Alcohol Syndrome (FAS). The third classroom (Turtle) was a full-day, year-round preschool classroom where 16 children were enrolled. Two children (which included one target participant) were identified as having disabilities. One lead teacher and a paraprofessional were present in this classroom. Teachers in this classroom reported that four students had behavioral plans, and that all of their students demonstrated challenging behavior. The fourth classroom (Bumblebee) was a full-day preschool setting where 19 children were enrolled with two lead teachers and a paraprofessional. One child in this classroom was identified as having a disability. During the course of this study, two children were expelled from this classroom for challenging behavior. Teachers in this classroom reported that six students were on behavioral plans as these six students demonstrated challenging behavior. The target participant in this classroom was being evaluated for Attention Deficit/Hyperactivity Disorder (ADHD) at the start of the study. See Table 3 for a summary of classroom demographics.

Child Participants

Descriptive information gathered on child participants included: (a) anecdotal information from teachers regarding children's adherence to behavioral expectations in settings such as circle time, breakfast/lunch, and recess; (b) preliminary observations of children to confirm teachers' anecdotal reports of settings in which children did not typically adhere to classroom expectations; (c) teacher completed *Abilities Indices* (Simeonsson & Bailey, 1991) with a focus on children's social skills; and (d) teacher completed *Social Skills Improvement System Rating Scales* (SSIS; Gresham & Elliott, 2008). The *Abilities Index* provided a profile of each participant across nine major areas (e.g., hearing, behavior and social skills, intellectual functioning, limbs, intentional communication, tonicity, physical health, vision, and structural

status). The *SSIS* evaluated the social skills, challenging behavior, and academic skills of each target participant. In consultation with the Head Start teachers, these measures served as criteria for inclusion and provided descriptive information on participants however they did not serve as measures of change in participants' social skills. These measures also were used to help identify the most problematic target setting and/or routine for each participant.

Table 3

Classroom Demographics

Classroom	Student enrollment	Students with behavioral plans	Students with challenging behavior	Students with disabilities
Butterfly	17	3 (17.6%)	8 (47%)	0 (0%)
Swan	16	3 (18.7%)	5 (31%)	1 (6%)
Turtle	16	4 (25%)	16 (100%)	2 (12.5%)
Bumblebee	19	6 (31.5%)	6 (31.5%)	1 (5%)

All target participants were male. They were three years of age ($M = 43$; range = 3; 8 to 3; 11) at the start of the study. Two participants received special education services and two participants were being evaluated for support services when the study began. Participants demonstrated difficulty learning classroom expectations due to their disabilities and/or possible need for supports as identified by the lead teacher and confirmed by the researcher following multiple observations (a minimum of four conducted prior to the start to the study) during problematic routines. That is, target participants were still learning classroom behavioral expectations months into the school year or needed to be reminded of behavioral expectations as a result of an identified or suspected disability, developmental delay, and/or need for supports. In order to ensure confidentiality, children were given the following aliases: Shayne, David, Corey, and Warner (see Tables 4-6 for target participants' demographic information, as well as information from the *Abilities Index* and *SSIS*).

Participant 1. Shayne, an African American male, was 3 years and 8 months at the start of the study. Shayne’s teacher rated him as having a suspected disability in several areas (i.e., intellectual functioning, intellectual communication). Data gathered from an interview with Shayne’s teacher indicated that her biggest concern was that he was not functioning independently and still needed lots of reminders and visual cues in the middle of the school year. She described him as “very low functioning” and indicated that he seemed to struggle cognitively, often appearing lethargic. She identified his problematic routines as bathroom, breakfast, and lunch. Shayne’s teacher reported that she has to stop and focus on Shayne during these routines and wait for him to follow her behavioral expectations. She was concerned that this compromised the safety of the other children in the classroom. Based on teacher report and data collected during the preliminary observations, Shayne consistently struggled to independently go to his spot at his table, raise his hand to be excused, push in his chair, and put his dish in the trash during the breakfast routine. Therefore, breakfast was selected as a target setting for data collection.

Table 4

Target Participant Demographics

Target participant	Head Start location	First day of school (i.e., start date)	Age	Ethnicity	Disability/services
Shayne	A	September 16th	3;8	AA	Referred for DD
David	A	September 12th	3;9	Caucasian	DD; Behavior
Corey	B	October 6th	3;9	AA	SLP; Behavior
Warner (control)	A	September 2nd	3;11	African	Evaluated for ADHD

Note. AA= African American; DD= Developmental Delay; SLP = Speech Language Pathology services; ADHD = Attention Deficit/Hyperactivity Disorder

Table 5

Abilities Index

Target participant	Audition	Behavior & social skills	Intellectual functioning	Limbs	Intellectual communication	Tonicity (muscle tone)	Integrity of physical health	Eyes	Structural status
Shayne	Normal	Suspected disability / Suspected inappropriate behaviors	Suspected disability	Normal	Suspected disability	Normal	Suspected health problems	Normal	Normal
David	Normal	Mild disability / Mildly inappropriate behaviors	Moderate disability	Mild difficulty	Suspected disability	Suspected disability	Ongoing but medically-controlled health problems	Normal	Suspected difference or interference
Corey	Normal	Suspected disability / Suspected inappropriate behaviors	Mild disability	Normal	Mild disability	Normal	Normal	Normal	Normal
Warner (control)	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal

Table 6

Social Skills Improvement System (SSIS) Rating Scales (selected items)

Social Skills	Shayne		David		Corey		Warner (control)	
	How often?	How important?	How often?	How important?	How often?	How important?	How often?	How important?
Asks for help from adults	Seldom	Critical	Often	Important	Almost always	Important	Often	Critical
Follows your directions	Seldom	Critical	Seldom	Important	Often	Critical	Seldom	Critical
Participates appropriately in class	Seldom	Critical	Seldom	Critical	Seldom	Critical	Often	Critical
Pays attention to your instructions	Seldom	Critical	Seldom	Critical	Often	Critical	Seldom	Critical
Participates in games or groups activities	Seldom	Critical	Almost always	Important	Seldom	Critical	Seldom	Important
Follows classroom rules	Seldom	Critical	Seldom	Critical	Seldom	Critical	Never	Critical
Academic competence/Learning behaviors	Lowest 10%	N/A	Lowest 10%	N/A	Middle 40%	N/A	Top 20%	N/A

Data from the *SSIS* (Gresham & Elliott, 2008) indicated that Shayne seldom engaged in appropriate social skills that were critical to classroom success. These skills included: asking for help from adults, following directions, paying attention to teacher instructions, following classroom rules, participating in group activities, and participating appropriately in class. Additionally, in comparison with other children in his classroom, Shayne's teachers assessed his learning behaviors as being in the bottom 10%. His teachers indicated that they had used visual supports and verbal prompting as strategies to help Shayne succeed in class. At the conclusion of the study, Shayne was referred for evaluation for a suspected developmental delay.

Participant 2. David, a Caucasian male, was 3 years and 9 months at the start of the study. He was identified as having a developmental delay due to a diagnosis of Fetal Alcohol Syndrome (FAS). David was on a behavioral plan to address hyperactivity and inattentive behaviors as a result of his disability. His teacher indicated a mild disability for social skills, and moderate disability for intellectual functioning on the *Abilities Index* (Simeonsson & Bailey, 1991). She also indicated that he exhibited characteristics of a suspected disability with regard to intellectual communication. Interview data indicated that David's teachers' biggest concerns across routines and transitions were that he did not use walking feet and engage in behavioral expectations independently. They also indicated that they frequently had to assist him to meet behavioral expectations which limited their time with other students. This was problematic. Based on teacher report and data collected during preliminary observations, David struggled to use walking feet throughout the lunch routine. He also struggled to go to his spot at the table independently, push in his chair, and put his dish in the trash following lunch. Therefore, the lunch routine was selected as the target setting for David.

Data from the *SSIS* (Gresham & Elliott, 2008) indicated that David seldom followed directions which his teacher rated as important for success in her classroom. She also indicated that he seldom participated appropriately in class which she rated as critical to success in the classroom. She noted that he seldom paid attention to her instructions and seldom followed classroom rules, which she considered critical skills for his development. In comparison with other children in the same classroom, David's teacher assessed his learning behaviors in the bottom 10%. Strategies that she had used to help David learn the behavioral expectations around target routines included reviewing expectations and classroom rules prior to engaging in target routines, as well as redirecting David using peer modeling.

Participant 3. Corey, an African American male, was 3 years and 9 months at the start of the study. Corey received services for a substantial speech and language impairment. He also received services for behavior. His teacher stated that she referred him for behavioral services because he did not follow directions and was noncompliant during centers and mealtimes. On the *Abilities Index* (Simeonsson & Bailey, 1991), Corey's teacher indicated a suspected disability in the area of social skills and a mild disability with regard to his intellectual functioning and communication. During the interview, Corey's teacher reported that all of the children in her classroom had difficulty learning the behavior expectations for specific routines and transitions. Her biggest concern was that she had to remind children about appropriate expectations repeatedly. Corey's teacher did highlight that his difficulty with learning the behavior expectations was due to his inconsistent attendance in school. Based on teacher report and data collected during preliminary observations, Corey struggled to say "I'm done" or "May I be excused?" and push in his chair independently before transitioning from lunch to naptime. Therefore, this transition time from lunch to nap was selected as the target routine.

Based on data from the *SSIS* (Gresham & Elliott, 2008), Corey's teacher reported that he often followed her directions and paid attention to her instructions, yet he seldom followed classroom rules which she noted were critical to success in her classroom. Although the teacher stated that he asked for help from adults, Corey seldom participated in games or group activities. Corey also seldom participated appropriately in class which his teacher highlighted as a critical skill. In comparison with other children in the same classroom, his teacher assessed Corey's learning behaviors as being in the middle of the class (40%). Strategies had proven helpful in teaching Corey behavior expectations included verbal prompting and reviewing expectations.

Participant 4. Warner, an African male, was 3 years and 11 months at the start of the study. His home language was French. This school year represented Warner's first year in a school setting in America. While his teacher rated him as "normal" on each of the variables for the *Abilities Index* (Simeonsson & Bailey, 1991), at the conclusion of the study he was evaluated for Attention Deficit/Hyperactivity Disorder (ADHD). Data from the *SSIS* (Gresham & Elliott, 2008) indicated that Warner never followed the classroom rules and seldom followed his teacher's directions, which were critical to success in the classroom. Warner's teacher also noted that he seldom paid attention to her instructions or participated in games or group activities. In comparison with other children in the same classroom, Warner's teacher assessed his learning behaviors in the top 20% compared to his classmates.

Warner's teacher's biggest concerns across classroom routines and transitions were for all the children to follow directions and sit quietly on the rug for morning circle. She reported that she often had to stop teaching to ensure that Warner followed her behavioral expectations. Based on teacher report and data collected during preliminary observations, Warner consistently struggled to meet behavioral expectations for the breakfast routine, which included standing in

line to wash his hands, serving himself food “family style,” throwing his dish in the trash, and going to the carpet. Therefore, breakfast was selected as Warner’s target routine. Strategies that his teacher used and found effective in helping Warner meet classroom expectations included: verbal prompting, environmental arrangement (i.e., separating Warner from children who distracted him), and using one-on-one supports. His teacher also indicated that visual prompts (i.e., visual schedules) helped Warner remember behavioral expectations, as well as peer modeling. See Table 7 for target routines and behavioral expectations.

Table 7

Study Procedures

Procedure	Baseline	(Teacher training)	Multi-component intervention	Maintenance
Before children enter the target setting or begin target activity (e.g., breakfast, lunch)		<ul style="list-style-type: none"> - One training session was conducted with each teaching team - Average time was 35 minutes and 54 seconds - Handouts provided 	The teacher reads the scripted story to the class, asks questions about the story, and implements role play scenarios.	
After children have entered the target setting or began target activity (e.g., breakfast, lunch)	<p>All participants proceed with the classroom routine as normal.</p> <p>Data collectors record participants’ adherence to behavioral expectations and teachers’ use of prompts.</p>		<p>Teachers implements prompts (i.e., verbal, physical, model, gestural, or visual cue) in the target setting, if needed.</p> <p>Data collectors record participants’ adherence to behavioral expectations and teachers’ use of prompts.</p>	<p>All participants proceed with the classroom routine as normal.</p> <p>Data collectors record participants’ adherence to behavioral expectations and teachers’ use of prompts.</p>

Materials

After all observations were completed, scripted stories were developed for each target participant, along with role play scenarios, and suggested prompts. These materials were developed collaboratively by the participating Head Start teachers and the researcher. The multi-component intervention materials included four scripted stories (one for each class) and supplemental pictures to be used during the intervention. The scripted stories were created using Microsoft Power Point™ on 8 x 10” white paper. Photographs in the scripted story highlighted target settings within the classroom where children were expected to engage in appropriate behavioral expectations. Photos were standard size images (e.g., 4 x 6”), printed in color. Scripted stories contained descriptions of the behavioral expectations targeted for all children in the classroom. Scripted stories typically contain photos of the target child, however, Shayne’s parent did not consent for him to be photographed. Therefore, photos in the scripted story for Shayne’s classroom contained a non-target participant who was his peer. Photos in the scripted stories captured participants in their natural settings, and showed target children and non-target children using the skills needed to be successful in their classroom environments.

The scripted stories were tailored specifically to each classroom and the needs of each target participant. This information was gathered from extended observations and anecdotal information provided by teachers. The scripted stories adhered to Carol Gray’s guidelines for creating social stories (e.g., ratio of sentences; Gray & Garand, 1993); however they varied slightly from these guidelines based on the developmental abilities of the participants (e.g., contained fewer words, simpler vocabulary). The scripted stories only utilized descriptive, perspective, and directive sentence types (see Appendix C for a sample scripted story).

Materials used for the teacher intervention (described later) were placed in an 8 x 10” plastic folder. Intervention training items within this packet included a 4-page handout containing step-by-step procedures for the scripted story reading, role play steps, and prompts to use during the targeted routine. The handout included a rationale for the study, a detailed description of scripted stories and role play, as well as a description and examples of the different types of prompts. Teachers also were given an 8 x 10” sheet of paper that contained step-by-step implementation procedures for the scripted story, role play, selected questions to ask children, and prompt components of the intervention. Additionally, teachers were provided with a resource on how to create a scripted story from the Center on the Social and Emotional Foundations for Early Learning (CSEFEL) website (<http://csefel.vanderbilt.edu/scriptedstories/tips.pdf>). Finally, an article on prompting procedures was shared with the teachers (Meadan, Ostrosky, Santos, & Snodgrass, 2013). These materials were provided to each teaching team during the training sessions. A sample scripted story was used to train teachers; it was similar to the scripted story that was used with participating children.

Research Design

A multiple-probe design across four classrooms was employed for this study (Kazdin, 2011; Kennedy, 2005). For each classroom, probe sessions occurred one to three times per week in the target activity. Following the teacher training sessions, data on teacher and target participants were collected during the designated target setting. During these sessions, the researcher gathered data (with a reliability observer) while the teacher and participants were in the target setting. Maintenance data were collected twice a week for three weeks for the Butterfly

classroom. Due to the end of the school year, and inconsistency in student attendance (Corey) maintenance data could not be collected in the other classrooms.

This study included the following phases: (a) baseline; (b) multi-component intervention; and (c) maintenance for one classroom.

Procedures

Two dependent variables were measured in this study: (a) teachers' implementation of prompts; and (b) children's demonstrations of behavioral expectations in a target activity or routine. See Table 8 for the study procedures.

Table 8

Target Routines and Behavioral Expectations

Classroom	Target participant	Target routine	Behavioral expectations
Butterfly	Shayne	Breakfast	<input type="checkbox"/> Go to spot at table <input type="checkbox"/> Raise hand to be excused <input type="checkbox"/> Push chair in <input type="checkbox"/> Put dish in trash <input type="checkbox"/> Stand in line / Go to carpet
Swan	David	Lunch	<input type="checkbox"/> Walking feet throughout lunch routine <input type="checkbox"/> Go to spot at table <input type="checkbox"/> Push chair in <input type="checkbox"/> Put dish in trash <input type="checkbox"/> Go to carpet or basket
Turtle	Corey	Transition from lunch	<input type="checkbox"/> Say, "I'm done" or "May I be excused?" <input type="checkbox"/> Pour milk in sink <input type="checkbox"/> Put dish away <input type="checkbox"/> Push chair in <input type="checkbox"/> Go to cot
Bumblebee	Warner (control)	Breakfast	<input type="checkbox"/> Stand in line <input type="checkbox"/> Go to spot at table <input type="checkbox"/> Serve self food <input type="checkbox"/> Throw dish in trash <input type="checkbox"/> Go to carpet

Baseline. During this phase, the teacher and child participants proceeded with the classroom routine as usual. For each classroom, the lead teacher and researcher identified the problematic routine. Baseline data were collected until a stable pattern of behavior was evident with limited variability (Kratochwill et al., 2013).

Teacher training. Teachers were trained on the intervention following baseline data collection. The researcher conducted one training session lasting less than an hour with each teaching team. The two teachers in the Butterfly and Swan classrooms were trained on different days because they were not able to attend the same training session. Each teaching team and the researcher met in a designated area for staff (i.e., staff lounge) or in the classroom when children were not present. Each person on the teaching team received the packet of intervention materials highlighted previously.

The training session involved: (a) how to read the scripted story; (b) what to say during the story; (c) what questions to ask the students as the scripted story was read; and (d) role-play procedures (i.e., read a scenario to children, children practiced behavioral expectations such as throwing away dishes, or pushing in chairs). Specifically, the researcher described the rationale for the study, guidelines for scripted stories, and how the stories would be adapted to accommodate different developmental abilities. The teachers were provided with an opportunity to review a scripted story that was also used for the classroom intervention. The researcher provided information from observational data on each target participant (i.e., behavioral expectations that were not met during observations, how often the target participants did not meet these expectations, specific behavioral expectations that the target participants appeared to have the most difficulty learning). The researcher and teaching team watched videos, discussed

what was observed, and role played strategies. The researcher checked for understanding by asking questions and soliciting teacher feedback during the training sessions.

A MacBook Pro™ 10.9.5 was used to show videos to the teachers for training purposes. A 2-minute video on “Teaching Tucker” from the Center on the Social and Emotional Foundations for Early Learning (CSEFEL) website (http://csefel.vanderbilt.edu/resources/training_preschool.html) was shown to demonstrate how to read a scripted story and role play behavioral expectations with children. In this video, a teacher actively engages children in the reading process and she uses role play to teach behavioral expectations. Teachers also observed the researcher model how to read the scripted story, ask comprehension questions, and conduct the role play procedures. Each lead teacher had an opportunity to practice reading the scripted story, ask comprehension questions, and role play with other members of the teaching team or the researcher. The researcher provided feedback on teacher performance.

The researcher reviewed a menu of prompts (i.e., verbal, physical, model, gestural, and visual) with each teaching team to help them identify what prompts might be appropriate for each target child. This information also was corroborated with data gathered from the initial structured interview and preliminary observations conducted by the researcher. In collaboration with the researcher, teachers decided on prompts that might help the target participant learn the behavioral expectations for the target routine. The researcher reviewed pre-selected content from the Autism Internet Modules (http://www.autisminternetmodules.org/mod_view.php?nav_id=650) that was most relevant to the teachers’ skills and needs as determined through classroom observations. This content included two sections: (a) *What Other Factors Should Be Considered Before Using Prompting?*

and (b) *Tips for Using Prompts Effectively*. These sections highlighted implementation strategies for children who are prompt dependent, the importance of reinforcing children to help them learn and maintain a skill, how to implement reinforcement, and prompt fading. Using discussion and role play, the researcher modeled the selected prompts and/or strategies with behavioral expectations as examples. The teachers also had opportunities to practice the prompts with other members of their teaching team or with the researcher. The researcher provided the teachers with multiple opportunities to ask questions, make comments, or share concerns. The length of time for training sessions averaged 35 minutes and 54 seconds (range = 23 minutes and 49 seconds to 41 minutes and 44 seconds). These times represent the times the audio recorder was started and stopped.

Multi-component intervention. The multi-component intervention was implemented to teach children behavioral expectations during specific routines (e.g., breakfast, lunch, etc.). This intervention included reading a scripted story about the behavioral expectations, providing children with an opportunity to practice the behavioral expectations, and prompting children (as needed) during the target routine to perform the skill. For the first component of the intervention, a scripted story was read by a member of the teaching team to all the children in the classroom prior to entering the target setting (e.g., breakfast, lunch). The teacher asked the target child comprehension questions throughout the reading of the scripted story or directly after reading the scripted story. The next component of the intervention was role play. The role play procedures occurred after the teacher asked students comprehension questions or during the course of reading the story. Role play involved the teacher reading a scenario to the children that was very similar to what occurred in the target setting. After reading the scenario, the teacher asked a few students (i.e., two or three), including the target participant, to role play appropriate behavioral

expectations. For example, the teacher might have provided the target child with an opportunity to demonstrate the behavior and then she reinforced the student's appropriate responses (i.e., "Good job throwing away your trash!"). In two classrooms, the teachers prompted peers to praise the target child for correctly following behavioral expectations during role play (i.e., "Good job Corey!"). If the target child did not meet the behavioral expectation, the teacher asked another student to demonstrate the appropriate behavioral expectation for the class.

The third component of the intervention was the teacher's use of prompts during the target setting and/or routine. These prompts include verbal, gestural, physical, visual, and modeling. For example, a teacher might provide a verbal prompt during the mealtime routine such as, "Corey, please push in your chair." If the target participant did not respond, the teacher repeated the verbal prompt. If the target participant engaged in the behavioral expectation, the teacher reinforced the child's behavior (i.e., "Good job pushing in your chair!" or he/she gave the child a high-five). Teachers also implemented class-wide prompts such as, "Okay, everyone, it's time to clean up, we need to first put our dish in the trash!" or they had a peer model a behavioral expectation for the entire class. For example, a teacher might say, "Tommy, can you show the class how to put your dish in the trash? Wow, class. Tommy did a nice job putting his dish in the trash." Teachers were trained to implement a complete learning trial (wait for target stimulus, prompt, reinforce) each time a target participant did not meet the behavioral expectation. Data were only collected on prompts that were specifically directed towards the target participants.

Maintenance. Maintenance data on behavioral expectations and teacher prompts were gathered twice a week for three weeks after the intervention phase was completed in the Butterfly classroom. Due to the end of the school year for the Swan classroom and inconsistent

school attendance for the target participant in the Turtle classroom, it was not possible to gather maintenance data. Data were collected on behavioral expectations and teacher prompts.

Coaching. The teaching teams required additional coaching throughout intervention when target participants did not adhere to all five behavioral expectations (i.e., 100%) and/or if teachers did not implement the intervention with high fidelity (i.e., below 80%). Coaching sessions were individualized to meet the skill level and/or needs of each teaching team and included a combination of approaches, such as email feedback about teacher performance, quick “debriefing” discussions after the intervention was implemented for the day, and discussions over the phone. Coaching strategies were not selected systematically and specific criteria was not used to determine when coaching was needed. The researcher implemented strategies based on clinical judgment and classroom observation of teachers’ needs.

For the Butterfly classroom, teachers were coached to provide Shayne with an opportunity to independently engage in the behavioral expectations before prompting, as the researcher observed that Shayne appeared to be prompt dependent. Coaching also involved arranging the environment to have the paraprofessional sit at a different table than Shayne to support his ability to meet the behavioral expectations independently. Another strategy implemented for this classroom included use of class-wide prompts and peer modeling to remind all children of the expectations. For the Swan classroom, a variety of coaching strategies were employed. For example, the researcher modeled class-wide prompting strategies with a classroom of children not affiliated with the study while the teachers in the Swan classroom observed. The purpose of this strategy was to show the teachers how to support children during the transition from lunch to the carpet. The researcher also demonstrated how to model the behavioral expectations while using class-wide verbal reminders (i.e., “Ms. Price is finished with

her lunch. She is going to use her walking feet to push in her chair and put her dish in the trash!”). Finally, the researcher provided the teachers in the Swan classroom with a visual prompt (i.e., the behavioral expectations were written on a white board) to remind them of the behavioral expectations for the target participant. For the Turtle classroom, email feedback on teacher performance was sufficient to help them maintain high fidelity of implementation and help the target participant meet the criteria for the study.

Dependent Measures

Two dependent variables were measured in this study: (a) children’s demonstrations of behavioral expectations in a target activity; and (b) teachers’ implementation of prompts.

Behavioral expectations. Behavioral expectations were determined in collaboration with the lead teachers after carefully observing the children in each classroom and interviewing teachers about their expectations for certain routines and transitions. Using a direct observational system that contained a checklist of the behavioral expectations, the researcher recorded occurrence and non-occurrence of adherence to behavioral expectations. That is the researcher recorded whether or not the target child independently met the behavioral expectation if an opportunity was provided. For each participant the behavioral expectations were operationally defined. See Table 9 for questions used to identify behavioral expectations in each classroom.

Table 9

Questions to Identify Behavioral Expectations & Prompts for Target Participants

Behavioral Expectations	Prompts
<ul style="list-style-type: none"> • What are the behavioral expectations for your classroom? • Are there any children who have difficulty learning these behavioral expectations? • What are your biggest concerns across routines and transitions? • When children do not learn these behavioral expectations, how does it interfere with your classroom routine and climate? • Why do you think these children have difficulty learning the behavioral expectations? • What are some strategies you currently use to help children learn behavioral expectations? 	<ul style="list-style-type: none"> • Which types of prompts are most effective for other children in your classroom with similar skills as (child’s name)? • Which types of prompts do you feel are most effective for (child’s name)? • Which types of prompts do you feel are least effective for (child’s name)? • Which types of prompts are you least familiar with? • Which types of prompts are you most familiar with?

Prompting. The prompt learning trial consisted of teachers prompting the child once, waiting for the child to perform the skill successfully, and then reinforcing the child for meeting the behavioral expectation. Prompts were implemented during the target routine to cue behavioral expectations. Occurrence and non-occurrence of correct prompts also were collected on teacher behavior (i.e., prompts implemented and social reinforcement) to evaluate the effectiveness of teacher training. If a teacher used incorrect prompts for two consecutive sessions, she/he was reminded of the prompting strategies that were discussed during training.

Training fidelity. Training fidelity for teachers was assessed using a Sony Digital Voice Recorder and an Apple™ iPhone 6 with a 4.7 inch display. A research assistant (graduate student in Early Childhood Special Education) was trained by the researcher to accurately score the training using a fidelity checklist. Fidelity measures were not conducted on the coaching

strategies. The mean training fidelity score across all classrooms was 99% (range = 95% to 100%; see Table 10).

Table 10

Fidelity of Teacher Training

Team / classroom	Percentages
Butterfly	100
Butterfly (Nancy only)	100
Swan	95
Swan (Lakeisha only)	100
Turtle	100
Average	99

Reliability was calculated for two (40%) training sessions. Reliability percentages were calculated by dividing the number of agreements by the number of disagreements plus agreements and multiplying this figure by 100 (Kratochwill et al., 2013). The reliability score for each session was 89%.

Fidelity of implementation. To evaluate the accuracy with which the multi-component intervention was implemented by the teachers, a fidelity checklist was used (i.e., scripted story, role play, and prompt procedures). A graduate student in Special Education was trained by the researcher to accurately complete the fidelity checklist as the intervention sessions occurred. The research assistant was positioned about 5-10 feet from all participants as the intervention was implemented; the researcher was not present in the classroom during implementation of the scripted story reading and role play procedures. Procedural fidelity included all three components of the intervention (i.e., scripted story reading, role play, and use of prompts by teachers in the target setting).

Procedural fidelity was calculated by dividing the number of correct steps by the total number of steps multiplied by 100. Fidelity data were gathered on 33% of the sessions for the Butterfly classroom, 42.8% of the sessions for the Swan classroom, and 37.5% of the sessions for the Turtle classroom. The Bumblebee classroom did not receive intervention therefore fidelity data were not gathered. The mean fidelity score across the three classrooms was 90% (range = 57% to 100%; see Table 11 for fidelity of implementation data).

Table 11

Fidelity of Implementation for Intervention

Classroom	No. of sessions	Average	Range
Butterfly	6	97%	94% - 100%
Swan	7	81%	57% - 92%
Turtle	8	95%	91% - 100%
Overall percentage	N/A	90%	57% - 100%

Data Collection, Reliability, and Coding

A direct observational checklist was used to collect data “live” on target participants’ adherence to behavioral expectations in target settings (e.g., breakfast, lunch) and teachers’ implementation of prompting strategies. The researcher recorded the occurrence and non-occurrence of all dependent variables. Observers were two graduate students in Special Education who had experience in data collection, one of which was the researcher. The researcher and the reliability observer watched each participant in the target setting to see whether each behavioral expectation (i.e., go to spot at table, push chair in, put dish in trash, etc.) was met. Data also were collected on prompts used to cue the target participant on behavioral expectations and whether or not teachers implemented the learning trial correctly. Data were gathered using paper and pen with the data collectors positioned about 10 feet from the target participant.

During baseline, the researcher and a reliability observer gathered observational data on target participants' adherence to behavioral expectations, and the use of prompts by teachers across the four classrooms. During the intervention and maintenance phases, the researcher joined the reliability observer to observe target participants once a student was instructed to enter the target setting. The researcher and reliability observer concluded the observation session when the target participant left the target setting to engage in a different activity and/or routine.

Coding. All verbal (VP), gestural (GP), model (M), physical (PP), and visual (V) prompts that were directed at the target participants and aligned with the behavioral expectations for a specific setting and/or routine were coded. A child/peer prompt (Ⓢ) indicated that a peer prompted a target participant about the behavioral expectations for a specific setting and/or routine. For example, a peer might have said, "(Name), we can't put our dish in the sink!" If a target participant adhered to behavioral expectations independently this was coded as "I". For example, the behavioral expectations for transitioning from lunch to nap time were: (a) Say "May I be excused?" or "I'm done!" (b) Push your chair in; (c) Put your dish in the trash; (d) Pour your milk in the sink; and (e) Go to cot. If a child independently met any of these behavioral expectations, that step was coded "I." No opportunity (NO) indicated that the target participant did not have an opportunity to meet the behavioral expectations. For example, a behavioral expectation selected for the Bumblebee class was for children to serve themselves. If a teacher served the child food, this was coded as "NO." Data also were collected on the quality of prompts (correct/incorrect). If a child did not correctly meet a behavioral expectation after a teacher prompt, the child's response was coded with an "✗" to designate incorrect response. Additionally, if a child did not meet a behavioral expectation and was not prompted, their response was coded with an "✗" as well. If a teacher did not prompt a child to meet the

behavioral expectation, or did not complete the entire learning trial for the prompt sequence, an “☒” for incorrect response was coded for the teacher behavior. If a child correctly met a behavioral expectation after a teacher prompt, their response was coded with an “☑.” If a teacher completed the entire learning trial for the prompt sequence, an “☑” was coded to indicate that a correct prompt was delivered. To indicate which adult delivered each prompt, the following codes were used: “T” for the lead teacher, and “TA1” or “TA2” for the paraprofessionals.

Reliability. Three interobserver training sessions were conducted before observations began. In the first session, the researcher and reliability observer watched a YouTube™ video that showed two children who did not meet the behavioral expectations for a target routine (i.e., circle time). The observers coded behaviors using pre-selected codes, and discussed coding rules for behavioral expectations, and prompts based on this video. In the second and third training sessions, the researcher and reliability observer conducted a pilot session at Head Start with children who were not involved in this study.

Reliability percentages were calculated by dividing the number of agreements by the number of disagreements plus agreements and multiplying this figure by 100 (Kratochwill et al., 2013). The average reliability percentages for the first training session was 70%, and for the second training session it was 90%. Average reliability percentages for teacher prompting for the first and second sessions were 70% and 90%, respectively. Training for inter-observer agreement concluded when the researcher and observer reached 80% agreement for the following dependent variables: (a) behavioral expectations; (b) prompts; (c) child’s correct response to prompt; and (d) child’s incorrect response to prompt or incorrect behavior for at least one observation. To address observer drift, the reliability observer periodically received a “booster training” from the

researcher to discuss discrepancies in coding if reliability was below 80%. See Table 12 for reliability on training sessions.

The reliability observer gathered data on at least 33% of observations across all phases and participants. The average reliability percentages for behavioral expectations across participants for baseline was 92% (range = 80% to 100%), for intervention it was 95% (range = 60% to 100%), and for maintenance it was 100%. The average reliability percentage for teacher prompts for baseline was 95% (range = 80% to 100%), for intervention it was 98% (range = 60% to 100%), and for maintenance it was 100%. The average reliability percentage for correct child response to a teacher prompt for baseline was 97% (range = 80% to 100%), for intervention it was 90% (range = 60% to 100%), and for maintenance was 100%. The average reliability percentages for incorrect response to a teacher prompt or incorrect behavior for baseline was 93% (range = 80% to 100%), for intervention it was 90% (range = 80% to 100%), and for maintenance it was 100%. The average reliability percentage for no opportunity for baseline was 97% (range = 80% to 100%), for intervention it was 97.5% (range = 80% to 100%), and for maintenance it was 100%. The average reliability percentage for correct prompts across all teachers for baseline was 83% (range = 40% to 100%), for intervention it was 95% (range = 80% to 100%), and for maintenance it was 100%. The average reliability percentage for incorrect prompts across all teachers for baseline was 80% (range = 40% to 100%), for intervention it was 95% (range = 80% to 100%), and for maintenance it was 100%. The average reliability percentage for type of prompt across all teachers for baseline was 85% (range = 80% to 100%), for intervention it was 98% (range = 80% to 100%), and for maintenance it was 100%. See Table 13 for average reliability percentages and Tables 14-17 for individual reliability percentages for all participants.

Table 12

Training Reliability Scores

Session	BE	Prompts	Correct response to prompt	Incorrect response to prompt / incorrect behavior	NO	Correct prompt (w/reinforcement)	Incorrect prompt (w/o reinforcement)	Type of prompt
1	70%	70%	100%	100%	100%	N/A	N/A	N/A
2	90%	90%	100%	100%	100%	N/A	N/A	N/A
Average	80%	80%	100%	100%	100%	N/A	N/A	N/A

Note. BE = Behavioral Expectation; NO = No Opportunity.

Table 13

Average Reliability Percentages Across Phases

Phase	BE	Prompts	Correct response to prompt	Incorrect response to prompt / incorrect behavior	NO	Correct prompt (w/reinforcement)	Incorrect prompt (w/o reinforcement)	Type of prompt
Baseline	92%	95%	97%	93%	97%	83%	80%	85%
Intervention	95%	98%	90%	90%	98%	95%	95%	98%
Maintenance	100%	100%	100%	100%	100%	100%	100%	100%
Average	96%	98%	95%	94%	98%	93%	92%	94%

Table 14

Reliability Percentages Across Phases for Shayne

Session	BE	Prompts	Correct Response to a Prompt	Incorrect Response to Prompt / Incorrect Behavior	NO	Correct Prompt (w/reinforcement)	Incorrect Prompt (w/o reinforcement)	Type of Prompt
Baseline								
1	80%	100%	80%	80%	100%	80%	80%	100%
2	80%	100%	100%	100%	100%	100%	100%	100%
Average	80%	100%	90%	90%	100%	90%	90%	100%
Intervention								
1	100%	100%	80%	80%	100%	80%	80%	100%
2	100%	100%	100%	80%	100%	100%	100%	100%
Average	100%	100%	90%	80%	100%	90%	90%	100%
Maintenance								
1	100%	100%	100%	80%	100%	100%	100%	100%
2	100%	100%	100%	80%	100%	100%	100%	100%
3	100%	100%	100%	80%	100%	100%	100%	100%
Average	100%	100%	100%	80%	100%	100%	100%	100%

Note. BE = Behavioral Expectation; NO = No Opportunity.

Table 15

Reliability Percentages Across Phases for David

Session	BE	Prompts	Correct Response to a Prompt	Incorrect Response to Prompt / Incorrect Behavior	NO	Correct Prompt (w/reinforcement)	Incorrect Prompt (w/o reinforcement)	Type of Prompt
Baseline								
1	80%	80%	80%	80%	100%	80%	80%	80%
2	100%	100%	100%	100%	100%	100%	100%	100%
Average	90%	90%	90%	90%	100%	90%	90%	90%
Intervention								
1	100%	100%	100%	100%	100%	100%	100%	100%
2	100%	100%	60%	80%	100%	100%	100%	100%
3	100%	100%	100%	100%	80%	100%	100%	100%
Average	100%	100%	87%	93%	93%	100%	100%	100%

Note. BE = Behavioral Expectation; NO = No Opportunity.

Table 16

Reliability Percentages Across Phases for Corey

Session	BE	Prompts	Correct Response to a Prompt	Incorrect Response to Prompt / Incorrect Behavior	NO	Correct Prompt (w/reinforcement)	Incorrect Prompt (w/o reinforcement)	Type of Prompt
Baseline								
1	80%	80%	100%	100%	100%	40%	40%	60%
2	100%	100%	100%	100%	80%	60%	60%	100%
3	100%	100%	100%	100%	100%	100%	100%	80%
Average	93%	93%	100%	100%	93%	66%	66%	80%
Intervention								
1	100%	100%	100%	100%	100%	100%	100%	100%
2	100%	100%	100%	100%	100%	100%	100%	100%
3	60%	80%	80%	80%	100%	80%	80%	80%
Average	87%	93%	93%	93%	100%	93%	93%	93%

Note. BE = Behavioral Expectation; NO = No Opportunity.

Table 17

Reliability Percentages Across Phases for Warner (control)

Session	BE	Prompts	Correct Response to a Prompt	Incorrect Response to Prompt / Incorrect Behavior	NO	Correct Prompt (w/reinforcement)	Incorrect Prompt (w/o reinforcement)	Type of Prompt
				Baseline				
1	100%	80%	100%	100%	100%	60%	60%	60%
2	80%	100%	100%	80%	100%	60%	60%	100%
3	100%	100%	100%	100%	100%	100%	100%	80%
4	100%	100%	100%	100%	100%	100%	100%	100%
5	100%	100%	100%	100%	100%	100%	100%	60%
Average	96%	96%	100%	96%	100%	84%	84%	80%

Note. BE = Behavioral Expectation; NO = No Opportunity.

Social Validity

Social validity data were gathered from teacher participants (i.e., lead teachers and paraprofessionals). All individuals on each teaching team were asked to complete a social validity questionnaire about the intervention. Open-ended questions focused on the maintenance of children's adherence to behavioral expectations and the use of scripted stories, role play, and prompts. The questions also focused on teacher training and participation. Questionnaires were distributed to all teaching team members via email by a graduate student who was not affiliated with this study. Each adult participant received the same questionnaire. The graduate student created codes to replace identifiable information for all individuals who responded to the questionnaire, and the student summarized the data.

Chapter 4

Results

To examine the efficacy of the multicomponent intervention, data were collected on child and teacher behaviors. Percent of behavioral expectations and correct use of teacher prompts (with reinforcement) were the main data coded across phases. For example, if a child participant met three out of the five behavioral expectations, his percentage correct was 60%. If a teacher participant prompted a child on one out of the five behavioral expectations, his/her percentage correct was 20%. If a child participant adhered to all five behavioral expectations, he/she was not prompted by their teacher. Results are presented in two graphs. Figure 1 shows the percentage of behavioral expectations children met independently while in the target setting. Figure 2 provides data on teachers' use of prompts while the child was in the target setting. Table 18 shows the total number of prompts implemented and the mean percentages of correct prompts for each phase and each child, while Table 19 shows the type of prompts and their frequency of use by teachers for each phase. Table 20 includes social validity data from three of the eight teacher participants who received a questionnaire. Child and teacher data are discussed in more detail in the following sections.

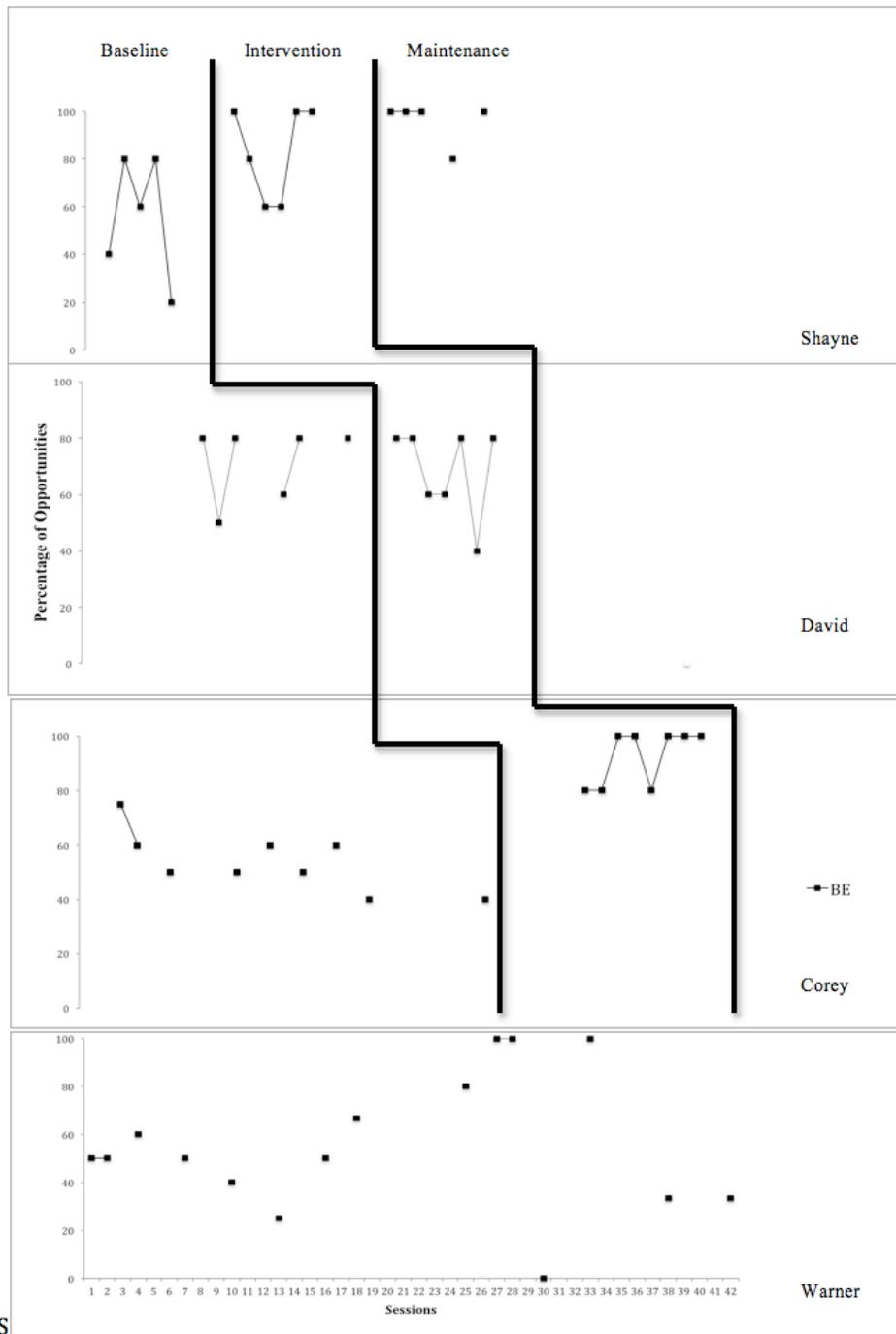


Figure 1. Children's adherence to behavioral expectations independently.

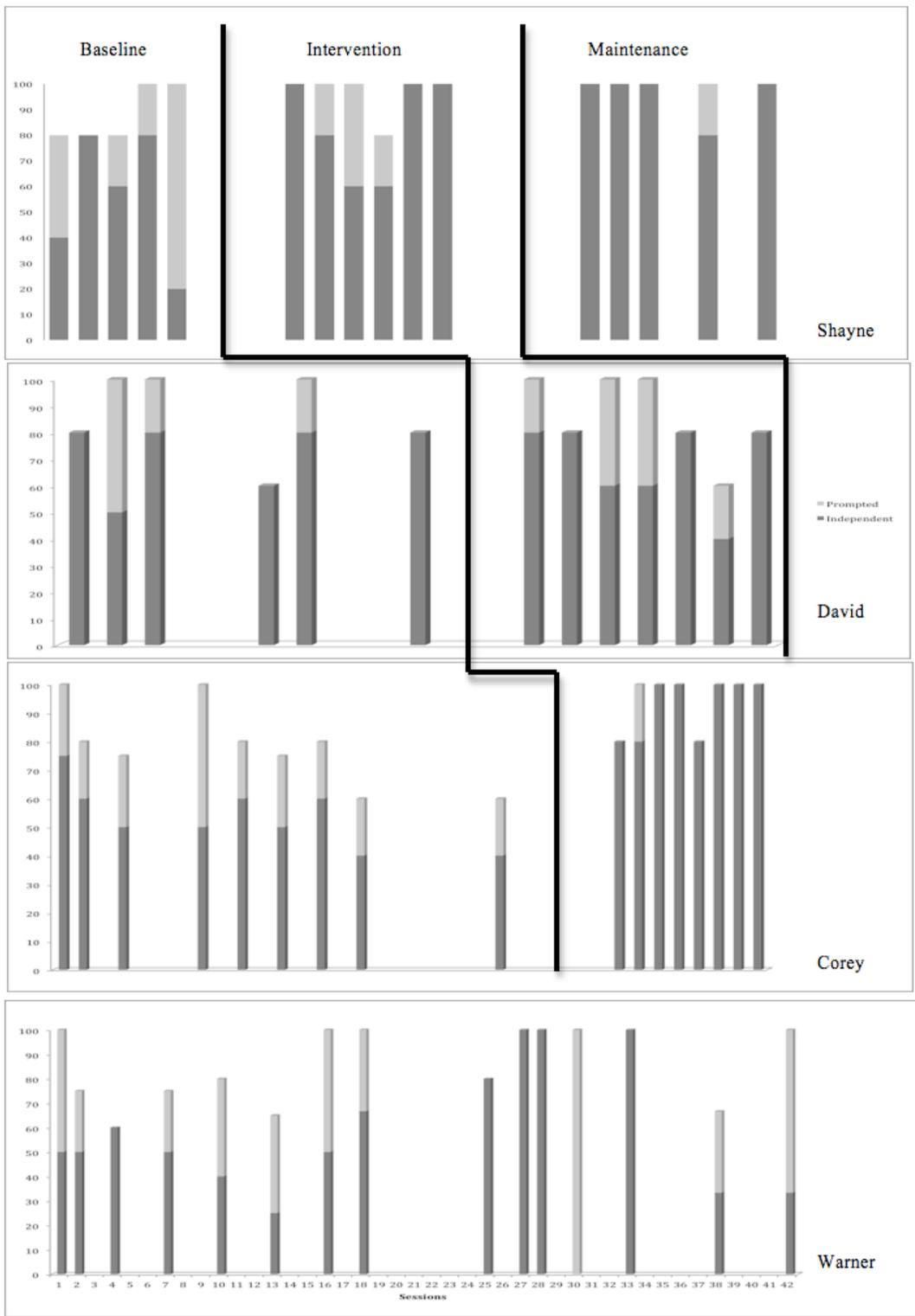


Figure 2. Children's adherence to behavioral expectations.

Table 18

Number of Prompts Implemented and Percentages of Correct Prompts

Phase	Shayne	David	Corey	Warner (control)
Baseline	9 (0%)	4 (0%)	10 (0%)	21 (0%)
Intervention	4 (75%)	6 (0%)	2 (50%)	N/A
Maintenance	1 (0%)	N/A	N/A	N/A

Note. Data represent frequency of prompts implemented and mean percentages of correct prompts for each phase.

Table 19

Type of Prompt for Each Phase and Each Child

Phase	Shayne	David	Corey	Warner (control)
Baseline	4 V / G (44%)	1 GP (25%)	1 PP (10%)	1 GP (5%)
	5 V (56%)	3 V (74%)	2 V / G (20%)	1 PP (5%)
			7 V (70%)	2 V / P (10%)
				8 V (40%)
			9 V / G (45%)	
Intervention	2 V (50%)	2 V (33%)	2 V (100%)	N/A
	2 V / G (50%)	4 V / G (67%)		
Maintenance	1 V (100%)	N/A	N/A	N/A

Note. V=Verbal; GP=Gestural; PP=Physical; V/G= Verbal / Gestural; V/P=Verbal/Physical.

^aData represent frequency of each type of prompt implemented and mean percentages of prompts implemented for each phase.

Table 20

Social Validity Results

Question	Teacher A	Teacher B	Teacher C
1. What changes, if any, did you see in your students' behavior as a result of their participation in this study?	The focused attention during the "training period" assisted the student to be more aware and built self-confidence in taking care of his own needs and responsibilities.	There were a few times the student would follow the classroom rules. We had to consistently go over the classroom rules with him, only to find out that he would continue to run instead of walk.	The target student now remembers to push in his chair when he is done eating. The target student helps to remind other children of the routine.
2. Did your students develop any new skills as a result of their participation in this study? If yes, please describe these.	The "training period" supported all of the lower children in the classroom in gaining skills to complete the routine.	I really cannot comment. This was one of my most challenging students.	The target student makes sure that all of the chairs are pushed in and remembers to throw away all of his items, rather than before.
3. Did you see these skills used outside of the classroom? If yes, please describe these.	None that I could specifically attribute to their participation in the study.	Occasionally, but not often as the student was easily influenced by peers.	No.
4. Would you suggest that this study be implemented with other children? If so, why?	Yes, especially the population of children that are served in the Head Start system. The majority of these children are very under-developed in their skills and abilities.	I believe this study could be used with children with learning disabilities, not children who are already hyperactive.	Yes, it helps them with reminders and remembering the expected behavior and the other children help as well.
5. Do you see yourself using scripted stories in the future? How do you imagine, if at all, using scripted stories that were made for your students?	We use scripted stories to orient the newly arrived students to our classroom routines and social behaviors. I would use more specific stories to target "individualized needs" for students, but time is involved to create and with the time we have it is impossible.	I am not sure. I think it's interesting, but I am looking at all options in helping children to remain focused which will make the teaching and learning go smoothly.	Yes! I think scripted stories are great to help the children understand the classroom routines, rules, and expectations.

(continued)

Table 20 (continued)

Question	Teacher A	Teacher B	Teacher C
6. Do you see yourself using role play in the future? How do you imagine, if at all, using role play with your students?	Teachers will use role play for the children. It is a great tool to provide visual, auditory, and hands-on instruction. Overall, the majority of our children are developmentally too low to understand how to role play.	I would. It would depend on the type of role play. Implementation of role play in the curriculum would be a great way to help the children learn better. I believe children learn better from doing.	It would help the child model the wanted behavior and the children follow the example.
7. Do you see yourself using prompts in the future? How do you imagine, if at all, using prompting strategies in the future?	We use prompts all day long, all year long with our population.	We use prompts with other children more than others. Not sure.	Yes, I currently use prompting with my students and I think that prompts really help the children.
8. Do you feel the training sessions supported your practice as a teacher?	It was adequate.	The sessions were supportive. However, I go more in depth by using other strategies if one doesn't work well. The training techniques that were done are something that we could do throughout the year. It worked for some children and not others. Implementing the classroom rules for all the students is very important. It helps to keep the children safe, allows the teacher to effectively teach so that children can learn.	Yes.

(continued)

Table 20 (continued)

Question	Teacher A	Teacher B	Teacher C
9. Did you gain any additional skills and/or knowledge as a result of the training?	No, I did not but it was a good refresher.	To remain positive and hope that scripted stories will work and continue to work for children like the target participant.	Yes.
10. Is there any other feedback that you would like to share with us?	The intensity of the daily instruction and role playing was beneficial for the student who was a good representative of a “lower ability” student.	Every day that Ms. Price entered the classroom she brought a positive attitude and energy with a smile. The students, myself, and my assistant enjoyed having her in our class.	No.

Shayne. In Figure 1, Shayne’s baseline data were highly variable and inconsistent. He adhered to most behavioral expectations for half of the baseline sessions, however for two of the baseline sessions, he met 40% or less of the behavioral expectations. Following intervention, Shayne followed all five (100%) behavioral expectations. This indicated a rapid increase in skill level or change in behavior from the last baseline session to the first intervention session. However, a declining trend line was evident over the next three intervention sessions. This resulted in three overlapping data points with the baseline phase. For the last two days of intervention, Shayne met all five (100%) behavioral expectations. An additional intervention session was needed to demonstrate that Shayne met criterion. Due to researcher error, these data were not collected. Maintenance data were relatively stable and high. Shayne met all behavioral expectations (with the exception of one session) for 3 weeks. Despite a decline on the fourth session of maintenance, he met criteria on the last maintenance session. The magnitude of the slope across all phases is medium with evidence of a minimal effect when comparing baseline and intervention phases.

David. In Figure 1, baseline and intervention data for David were highly variable and therefore inconclusive. During the baseline phase, he adhered to most behavioral expectations for half of the baseline sessions. For the first three intervention sessions, David adhered to most behavioral expectations. However, he only met 60% of the behavioral expectations for the next two intervention sessions. David met 80% of behavioral expectations for the sixth intervention session. Notably, the next intervention session represents the lowest percentage of expectations met across both phases with David only meeting two of five (40%) behavior expectations. For the last intervention session, David met 80% of the behavioral expectations. Although David consistently met four of five (80%) behavioral expectations for most of the intervention sessions, he did not reach criterion levels of responding. Thus, David did not demonstrate change in behavior from baseline to intervention as all intervention data points overlap with baseline data. Maintenance data were not collected for David as the school year ended on the last day of intervention.

Corey. Baseline data for Corey were variable in Figure 1. On the first day of baseline, he met almost 80% of the behavioral expectations but decreased to 60% on the second day of baseline. Throughout the rest of the baseline sessions he fluctuated between 40-60%. Following intervention, Corey demonstrated an immediate change in behavior as he met four of the five (80%) behavioral expectations on two consecutive sessions. He reached criterion and adhered to all five (100%) behavioral expectations for the next two consecutive sessions, however for the fifth intervention session he dropped to 80%. The last three sessions of intervention, Corey adhered to all five (100%) behavioral expectations. No overlapping data points and minimal variability across the baseline and intervention phases was observed. The magnitude of the slope across all phases was high with evidence of a large effect when comparing the baseline and

intervention phases. Maintenance data were not gathered on Corey because he missed a week of school after intervention had concluded and by then school had ended for the fourth participant. Corey's data are the best indicator of the probable success of this multi-component intervention. It is important to highlight that Corey not only demonstrated adherence to the behavioral expectations, but arguably, he demonstrated a type of "generalization" of the skill "push in chair" as he was observed by the researcher and reliability observer to push in his chair, as well as other children's chairs.

Warner. Due to the length of time it took for the first three participants to progress through intervention, Warner's teachers were never trained on the intervention and therefore he served as a control. Warner's probe data were variable across the study. Initially, Warner's adherence to behavioral expectations declined during the first 6 days of data collection. However, his percentages increased as the baseline phase continued. Toward the end of baseline, Warner met all five (100%) behavioral expectations for two consecutive sessions, followed by a day in which Warner did not meet any behavioral expectations (0%). During the next baseline session, Warner met all five (100%) behavioral expectations, however a decline in his ability to follow behavioral expectations was observed during the last two baseline sessions.

Although variable, Warner's data demonstrated that he could independently follow the behavioral expectations. For example, Warner demonstrated persistent difficulty in serving food "family style." The staff eliminated family style serving for the last few months of school due to a virus that affected many Head Start children. As a result, Warner did not have an opportunity to meet this behavioral expectation as all children were served by the teacher. Another skill that he had limited opportunities to perform was "stand in line." If there were no children in line to wash their hands, there was no opportunity for him to demonstrate this skill. However, when he

was required to “stand in line” and there was an opportunity to meet this behavioral expectation, Warner was able to do so.

Teacher Behavior

The average duration of intervention across all four classrooms was 9 minutes (range = 7 to 11 minutes). This included reading the scripted story to the large group, asking questions, and role playing behavioral expectations. Figure 2 provides data on teachers’ use of prompts while the child was in the target setting.

Butterfly Team. Teachers increased their use of prompts on the last baseline session (80%), however none of the prompts implemented during baseline were correct (0%). During teacher training, the researcher asked teachers to limit the amount of prompting they provided Shayne as she speculated that he was prompt dependent. This was confirmed when Shayne was observed waiting to be prompted before completing a behavioral expectation. After he was prompted, Shayne met the behavioral expectation and smiled at the teacher as if to suggest he understood the expectations but waited to be prompted. On the first day of intervention, teachers did not prompt Shayne on any behavioral expectations. Although the use of prompts was variable throughout intervention, three out of four (75%) prompts implemented were correct. Teacher prompting was stable and nonexistent during maintenance (with the exception of one session) as no prompt behavior was observed for four out of five maintenance sessions. A substitute teacher (untrained) prompted Shayne during one maintenance session. Hence, teachers never correctly prompted during maintenance (0%).

The average duration of the intervention sessions plus the target routine (i.e., scripted story reading, asking questions, role playing behavioral expectations, and prompting in the target

routine) was 28 minutes (range = 19 to 33 minutes) for the Butterfly classroom. Teachers used a variety of prompts during baseline and intervention, with verbal prompts occurring five times (56%) and used a combination of verbal/gestural prompts four times (44%) out of a total of nine prompts during baseline. In addition to the use of a class-wide model, verbal prompting was selected as a primary prompt to use with Shayne. Teachers used verbal prompts twice (50%) and used a combination of verbal/gestural prompts twice (50%) out of a total of four prompts during intervention. Teachers used a combination of verbal/gestural prompt once (100%) out of a total of one prompt during maintenance.

Swan Team. Teachers' use of prompts was variable at baseline in David's room, the Swan team. Following intervention, data continued to be variable. Teachers maintained their use of prompts and increased their frequency across all phases. None of the prompts implemented during baseline and intervention were correct (0%). Teachers were unable to successfully implement the prompt strategies discussed in training. For example, when David did not meet the behavioral expectations, teachers rarely prompted him to perform the skill with social reinforcement. However, David's teachers independently implemented several strategies to assist him with transitions during the lunch routine. For example, teachers often dismissed the class from the carpet area to the lunch tables by group (i.e., boys only, girls only, etc.). They also dismissed the children from the lunch tables to the carpet area one table at a time. Teachers implemented these strategies to see if David could meet the behavioral expectations within a smaller group. The researcher observed that these strategies were minimally successful. Teachers also quizzed the children on the behavioral expectations prior to their transition back to the carpet. Although David could verbally state the behavioral expectations, he still had difficulty following the expectations. The researcher suggested that teachers provide a class-wide model in

order for David to “see” the behavioral expectations as he participated in the lunch routine. The researcher also tried a variety of coaching strategies to support teachers’ implementation of the intervention. Unfortunately, these strategies were ineffective.

The average duration of intervention sessions plus the target routine in David’s classroom was 36 minutes (range = 32 to 39 minutes). Teachers used verbal, gestural, and combined verbal/gestural prompts during baseline and intervention. Teachers used verbal prompts three times (75%) and gestural prompts once (25%) out of a total of four prompts during baseline. In addition to using a class-wide model, verbal prompting was selected as a primary prompt to implement with David. Teachers used verbal prompts twice (33%) and used a combination of verbal/gestural prompts four times (67%) out of a total of six prompts during intervention.

Turtle Team. Baseline data for Corey’s teachers were stable. Teachers were consistent in their use of prompts throughout baseline. Following intervention, prompt behavior was minimally observed. Corey’s teachers did not prompt him during the final three intervention sessions. Intervention concluded with three consecutive sessions in which teachers provided no prompts. Thus, teachers decreased their frequency of prompts across baseline and intervention phases. Teachers’ correct use of prompts was not observed during baseline (0%); however, their correct use of prompts was observed during intervention (50%).

The average duration of the intervention sessions plus the target routine for the Turtle classroom was 15 minutes (range = 7 to 19 minutes). Teachers used verbal, gestural, combined verbal/gestural, and physical prompts during baseline and intervention. Teachers used a physical prompt once (10%), a combination of verbal/gestural prompts twice (20%), and verbal prompts seven times (70%) out of a total of 10 prompts during baseline. In addition to the use of a class-wide model, verbal prompting was selected as a primary prompt to use with Corey during

intervention and teachers only used this type of prompt during the intervention phase. Teachers used verbal prompts twice (100%) out of a total of two prompts during intervention.

Bumblebee Team. Teachers' use of prompts in Warner's classroom were highly variable and inconsistent. Teachers consistently prompted Warner throughout the initial baseline session, however, no teacher prompting was observed for three consecutive baseline sessions. There was an initial decline in prompting and then a slight increase in prompting on the final two days of data collection. The average percentage of teacher prompting for Warner during baseline was 36% (range = 0%-100%), however none of these prompts were correct (0%). His teachers used verbal, gestural, and physical prompts, as well as combined prompts such as verbal/gestural and verbal/physical. Teachers used one gestural prompt (5%), one physical prompt (5%), two verbal/physical prompts (10%), eight verbal prompts (40%), and nine verbal/gestural prompts (45%) out of a total of 21 prompts during baseline. Teachers did not use social praise to reinforce Warner when he met behavioral expectations during the target routine after prompting.

Quality Indicators. As data were analyzed, the quality indicators (Kratowill et al., 2013) were used to determine the following: (a) strength of research design (i.e., internal validity; and (b) strength of evidence of experimental control (i.e., visual analysis). The strength of the study design involved an analysis of systematic manipulation of the independent variable, repeated measurement of the dependent variables, inter-observer agreement (IOA) reported for more than 20% of data points in each condition, IOA higher than 80%, implementation of treatment fidelity, three attempts to demonstrate a treatment effect, and at least three data points per phase. The results of this study demonstrate systematic manipulation of the independent variable and repeated measurement of the dependent variable. For example, all three teachers implemented the intervention (i.e., scripted stories, role play) prior to child participants entering

the target setting where problematic routines were observed with fidelity. Teachers were trained on prompt procedures prior to the intervention phase. The researcher also repeatedly measured the dependent variable (i.e., behavioral expectations). IOA was reported for more than 20% of data points in each condition and was higher than 80% for treatment fidelity across all classrooms (see Tables 10-14). Finally, at least three data points per phase were collected (see Figure 1). While this study has some strengths, it does not meet the What Works Clearinghouse (WWC) single case design standards because three attempts to demonstrate a treatment effect was not obtained.

An analysis of the strength of evidence of experimental control involved visual analyses of a stable baseline, overlapping data points, immediacy of change, consistency of change, evidence of a functional relation, and strength of the functional relation. Baseline for each participant did not demonstrate minimal variability for three data points. Additionally, the levels were inconsistent throughout baseline phases. As such, a stable baseline was not observed for each child or teacher participant. A change in the level (i.e., immediacy of effect) for the last three data points in the baseline phase, and the first three data points in the intervention phase was only evident for Corey. Overlapping data points were noted across baseline and intervention phases for both Shayne and David. Based on these criteria, no evidence of a functional relation or experimental control can be established for this intervention because three demonstrations of an effect were not obtained (Kratochwill et al., 2013).

Social validity. While eight teacher participants were asked to complete the social validity questionnaire, only three teachers responded from three different classrooms (see Table 20 for social validity data). All three teachers reported changes in their students' behavior as a result of participation in this study. One teacher felt the target participant was more aware of the

behavioral expectations and was more self-confident as a result of the intervention. Another teacher reported that the target participant in her classroom remembered a few of the behavioral expectations, but still needed to be reminded about other behavioral expectations. Interestingly, another teacher stated that the target participant in her classroom remembered the behavioral expectations in her classroom and also reminded other students to meet a specific behavioral expectation (i.e., push in chair). Two teachers reported that their student developed new skills as a result of their participation in the study (i.e., push in chair, put dish in trash) and also mentioned they would use scripted stories in the future but would ensure that the stories targeted individualized needs of students. One teacher mentioned she would use role play in the future because she felt it was a great tool for visual, auditory, and hands-on instruction. Another teacher stated that she would like to use role play to show children how to model the behavioral expectations for their peers. All teachers mentioned that they had previously used prompts and felt they were an effective strategy.

With regard to teacher training, all teachers felt the training was adequate and that the training session was supportive. One teacher mentioned that the strategies discussed during training worked well with some children, but not for all of her students. While one teacher mentioned that she did not gain any new skills and/or knowledge as a result of the training, another teacher felt she gained additional skills and/or knowledge; however, she did not mention what skills and/or knowledge she had gained. Interestingly, one teacher mentioned she learned to remain positive as a result of the training.

Two teachers mentioned that the intervention presented in this study should be implemented with other children. One teacher mentioned that the intensity of the intervention was beneficial for her target participant as she felt he was a “good representation of a ‘lower

ability' student." Interestingly, a different teacher mentioned that the intervention would be helpful for children with specific disabilities, such as developmental delays, but not helpful for children who were hyperactive. Overall, teachers were generally positive in their feedback and the impact of the intervention on the children in their classroom.

Chapter 5

Discussion

This study evaluated the effectiveness of a multicomponent intervention (i.e., scripted stories, role play, and teacher prompts) implemented as a universal, or class-wide approach to teach young children behavioral expectations. The overall fidelity with which teachers' implemented the multicomponent intervention was high although the results indicate that a functional relation between the multicomponent intervention and children's adherence to behavioral expectation could not be established. For one classroom, implementation of these practices did not result in the target child's adherence to the behavioral expectations or demonstrate a change in teacher behavior. For the other two classrooms, teachers were able to implement the evidence-based practices with high fidelity which resulted in target children's adherence to behavioral expectations. According to the WWC quality indicators, the design of this study did not result in evidence of experimental control (Kratochwill et al., 2013).

When considering the results of this study, three issues are worthy of further discussion: (a) the influence of the environment on applied research; (b) the need for performance feedback when training teachers to implement evidence-based practices with fidelity; and (c) the relation between prompting and children's ability to independently demonstrate skills. Each of these issues is addressed within the context of the existing literature.

One of the challenges of conducting applied research is adjusting to changes in the natural environment that have the potential to impact the validity of an intervention (Gast & Ledford, 2014). Baer, Wolf, and Risley (1968) stated that applied research means, "examining behaviors which are socially important, rather than convenient for study" (p. 92). There are several benefits to conducting applied research. First, the behaviors that occur in natural settings

provide an opportunity to investigate real life interactions. Second, data collected on these behaviors reflect the actions of participants in natural contexts. That is, observers have access to behaviors that are more characteristic of individuals in real life contexts than what might be observed in laboratory settings (McKechnie, 2008). However, there are also drawbacks to natural observations. Wolery and Gast (2000) note several factors that impact research conducted in classroom settings such as: children getting sick or moving, fire drills and holidays occurring near changes in experimental conditions, low inter-observer agreement due to distracted observers, and inconsistent or incorrect implementation of strategies by teachers. The ability to control and completely eliminate extraneous variables is limited, as one cannot entirely control the environment where participants are observed (Spata, 2003; Wells, 2010). Also, participants often react to being observed (i.e., observer effect) which impacts the internal validity of a study. Finally, although researchers argue that applied research can be cost effective (McKechnie, 2008; O'Connor, 2010), Kazdin (2011) argues that conducting observations with reliability checks and maintaining standardized conditions in order to observe relevant behaviors can be arduous and costly.

While conducting this study, there were several changes in the environment that were not under the researcher's control. For example, the Butterfly classroom was observed by an auditor from the National Association of the Education Young Children (NAEYC) during the third intervention session. While the auditor was in the classroom, the teaching team did not reduce the number of prompts for Shayne as discussed during training. In fact, they reverted to over-prompting Shayne because they wanted all children to behave appropriately while the guest was in the classroom. These prompts were not needed as Shayne had demonstrated on the first day of intervention that he could meet the behavioral expectations independently. Another change in the

environment that occurred for this classroom was the presence of a substitute teacher who was not trained on the intervention. This teacher was present in the classroom during the fourth maintenance session. She prompted Shayne to meet a behavioral expectation that he had consistently met during intervention and maintenance.

A third challenge to conducting applied research is ensuring that teachers implement practices that have empirical support. Implementation science is the process of identifying strategies and/or practices that are evidence-based and promote positive outcomes for young children, while supporting teachers' implementation of these practices (Buysse & Wesley, 2006; Dunst & Trivette, 2008). Several researchers advocate for the use of implementation science practices in early childhood intervention research (Buysse et al., 2006; Dunst, Trivette, & Raab, 2013; Odom, 2008). Specifically, it is important to measure fidelity to assess the accuracy with which teachers implement evidence-based components of an intervention and evaluating how this impacts the effectiveness of the intervention (Wolery, 2011). Additionally, researchers advocate for a systematic process to provide teachers with feedback on their performance (Noell et al., 2005). Researchers assert that professional development workshops without ongoing support are typically not effective because they do not support teachers' consistent use of evidence-based practices (Odom, 2008). Some factors that impact whether or not teachers implement evidence-based strategies are the perceived need for, and benefit of the intervention, the extent to which teachers feel they can do what is expected (i.e., self-efficacy), and whether teachers possess the skills needed for implementation (Durlak & DuPre, 2008).

Teachers' acceptance of the intervention investigated as part of this study, or teacher "buy in" impacted the extent to which teachers implemented the evidence-based strategies with fidelity in their classroom environments. Although all teachers consented to participate in the

study, one team's interest decreased over time, as noted anecdotally by their comments to, and behavior toward, the researcher. This team had difficulty implementing the strategies because of the level of commitment and skill required to successfully implement the intervention. These two teachers appeared to have lost interest in the study after several unsuccessful attempts to implement the intervention. In fact, they resorted to implementing several other strategies to help the target child meet the behavioral expectations. While they were requested to continue with the same routine observed throughout baseline and remain consistent with the evidence-based strategies that were discussed during training (i.e., class-wide modeling and/or prompting, social reinforcement), they continued to implement their own strategies. Teacher "buy in" and/or teachers' proficiency in implementing the strategies may have impacted the quality of teacher training, fidelity of implementation, and the target child's behavior in this classroom.

Participant absenteeism can be another problem when doing applied research. Several studies have evaluated the impact of the number of intervention sessions, or dosage, on child outcomes (Fey, et al., 2006; Gray, 2003, 2005; Yoder & Warren, 2001, 2002). Treatment intensity is related to the quality and quantity of services delivered or the number of hours of intervention over a period of time (Lovaas, 1987). This is a critical variable that is directly related to intervention effects (Warren, Fey, & Yoder, 2007). Warner et al. (2007) define dose as the "number of properly administrated teaching episodes during a single intervention session" (p. 71). Although the quantity of adequate dosage varies across the literature (Parker-McGowan, Chen, Reichle, Pandit, Johnson, & Kreibich, 2014), it is widely understood that when participants do not receive an adequate number of intervention sessions or dosage, the intervention may be moderately effective or not observed (Warren et al., 2007). In this study, a target child's absenteeism for one week impacted evaluation of the intervention and maintenance

data collection. Following Corey's eighth intervention session, he was absent for one week. It would not have been feasible to continue with intervention data collection or maintenance data following his return to school.

A final challenge when doing applied research relates to changes in the routine. Toward the end of the study, the Head Start program eliminated "family style" serving during meals, which was a targeted expectation in one classroom. Child development occurs when children have frequent opportunities to practice skills within relevant and motivating routines and activities (Dunst, Bruder, Trivette, Raab, & MacLean, 2001). Utilizing routines to teach skills to children in early childhood settings has been documented as a recommended practice (Division for Early Childhood, 2014; Pretti-Frontczak & Bricker, 2001; Raver, 2003). Routines are an opportunity to monitor a child's progress and gather information on what skills children need to learn to identify appropriate intervention supports (Raver, 2004; Wolery, 2000). This change in routine for the Bumblebee classroom impacted the researcher's ability to evaluate the target child's skill level as the routine changed 10 days into baseline. Although new expectations possibly could have been identified at baseline, this did not occur.

The second issue worthy of discussion, performance feedback, an instructional strategy that uses data from observations to inform teachers about their classroom practices and is an important component of implementation science (Noell et al., 2005). This type of professional development occurs within the context of the teacher's classroom in an attempt to positively influence his or her behavior. Performance feedback has been shown to be an effective strategy that supports teachers' implementation of evidence-based practices over time (c.f., Artman-Meeker & Hemmeter, 2013; Casey & McWilliam, 2008, 2011; Hemmeter, Snyder, Kinder, & Artman, 2011). Performance feedback is a type of "trouble-shooting" that provides teachers with

an opportunity to seek clarification on intervention strategies, share concerns, and receive immediate feedback on their performance. Early childhood teachers face many demands on their schedule throughout the school day. As a result, it can be difficult to find quality time to conduct professional development. It is also difficult for teachers to retain information discussed during brief professional development sessions without sustained support and follow up. In this study, the researcher provided teachers with feedback on their performance based on observational data (i.e., she noted improvement in teacher behavior as two teaching teams were able to implement new strategies with fidelity) after each intervention session. Feedback on teacher performance was provided when the child participants did not meet all behavioral expectations independently and/or when fidelity was below 80% for the teacher participants. Without implementation of this process, change in teacher behavior may not have been observed. It should be noted, however, that fidelity data was not collected on performance feedback.

The third issue worthy of discussion is prompt dependency. Two child participants appeared prompt dependent based on observation. Prompt dependency has been addressed in the literature for older children and adults with severe disabilities and also is an important consideration for young children with disabilities (c.f., Howlin, Goode, Hutton, & Ruller, 2004; MacDuff, Krantz, & McClannahan, 1993; Pelios, MacDuff, & Axelrod, 2003). Prompt dependency refers to an overreliance on adult prompts and feedback in order to perform a skill or task (Howlin et al., 2004; Hume, Loftin, & Lantz, 2009). MacDuff, Krantz, and McClannahan (2001) define prompt dependence as, “a person responds to prompts instead of responding to the cues that are expected to evoke the target behavior” (p. 43). During baseline, Shayne and Corey met classroom expectations when prompted although it was suspected they could meet these expectations independently if provided with the opportunity. That is, the researcher observed that

the children only responded to adult delivered prompts and did not attend to relevant cues that indicated the next steps for a particular routine. During intervention, the teachers were asked to limit the number of prompts provided to target participants in an effort to observe what the children could do independently. Teachers overuse of prompt strategies limits a child's ability to independently perform a skill. It is important for teachers to fade or reduce the amount of prompting provided so that children have opportunities to demonstrate independent use of skills (Alberto & Troutman, 2012). Additionally, it is important for teachers to shift reinforcement from prompted to unprompted responses to minimize the impact of prompt dependence (MacDuff et al., 2001).

Limitations

There were several limitations to this study that should be considered when interpreting these results. Researcher error (i.e., not conducting an additional intervention session for Shayne, absence of data points for David before intervening with Shayne) and the end of the school year impacted the number of intervention data points for two students. Additional intervention data would have strengthened the findings of this study if all children continued to meet criteria. It is also important to note that the researcher did not implement a systematic protocol for teacher coaching and performance feedback practices during intervention. Additionally, three threats to internal validity should be highlighted when considering the findings from this study: (a) observer effect; (b) child maturation; and (c) instrumentation (Kratowill et al., 2010).

First, a critical aspect of teacher behavior is the impact of having observers in the classroom, particularly an observer who also trained the teachers on the intervention (Kennedy, 2005). Although preventive strategies were implemented to reduce the effect of an observer on

teacher behavior (i.e., researcher spent time in the classroom prior to data collection, she built relationships with the teachers), the teachers may have still felt they were being evaluated on their teaching practices. Second, child maturation was another threat to validity. As indicated earlier, this school year represented Warner's first exposure to an American school. He turned 4 years old. Warner did not receive intervention because the school year ended. However, the researcher noted that he was able to meet most behavioral expectations (i.e., put dish in trash, stand in line) by session 10. Anecdotally, his teachers also reported these improvements in his social skills and attributed these changes to maturation, school attendance, and consistent exposure to the behavioral expectations in his classroom.

Third, with regard to instrumentation, although teachers were taught to use descriptive Praise during the training sessions, they provided both general and descriptive praise. As such, the researcher also coded general praise as social reinforcement because it was an improvement in teacher behavior from what was observed in baseline. Descriptive praise is a recommended practice that has been shown to result in changes in child behavior. Several studies have reported that teachers can be taught to use descriptive praise and this positively impacts children's behavior (c.f., Conroy, Sutherland, Vo, Carr, & Ogston, 2014; Fullerton, Conroy, & Correa, 2009; Hemmeter et al., 2011; Stormont et al., 2007). While this is important to highlight, it is also critical to support teachers' developmental trajectory and highlight changes in behavior and/or skills that denote improvement. It is encouraging to observe subtle changes in teachers' behavior despite failure to completely adhere to all intervention components.

Implications for Practice

One implication for practice emerged from this study. A second implication for practice is the use of literacy to address developmental outcomes. The multi-component intervention highlighted in this study served as a tool to informally teach concepts about print (i.e., left to right correspondence, word recognition, letters and words convey a message, print is what we read, illustrations correspond with print, etc.) as well as address social and emotional skills (Clay, 1991). Although there is no research that demonstrates social stories can be used to teach literacy skills to young children (Wong et al., 2014), there is substantial literature that indicates quality book reading experiences positively impact children's language and literacy development (c.f., Bus, van Ijzendoorn, & Pellegrini, 1995; Justice, Kaderavek, Xitao, Sofka, & Hunt, 2009; Justice & Pullen, 2003; Mol, Bus, & de Jong, 2009; Whitehurst, Arnold, Epstein, Angell, Smith, & Fischell, 1994). Using literacy to address social and emotional skills is an opportunity for early childhood teachers to target developmental outcomes across domains. This was demonstrated as Corey, who also received speech-language services, learned new vocabulary. A page of the scripted story used in his classroom stated, "After I have finished eating, I can say, 'I'm done' or 'May I be excused?'" At baseline, Corey consistently stated, "I'm done" before leaving the lunch table. During intervention he was heard saying, "I'm excused" prior to leaving the lunch table. Although not a correct statement pragmatically, his use of the word "excused" was new in this context. One could argue that he may have acquired new vocabulary as a result of the multi-component intervention.

Future Research

There are four areas where future research is warranted. First, researchers should investigate the impact of peer support on children's adherence to behavioral expectations. Research also should evaluate the use of praise or social reinforcement and its impact on young children and their social and emotional development. A primary way that attitudes about individuals with disabilities are developed is through interactions with individuals with disabilities (Favazza & Odom, 1997; Triandis, 1971). In this study, classroom peers were supportive and provided praise as target participants met the behavioral expectations during intervention. It is important to investigate further whether class-wide interventions help children learn behavioral expectations and foster positive attitudes towards children with disabilities.

Second, the impact of family culture on children's adherence to school expectations is also an important consideration for future research. At the time of the study, Warner was referred for special education services due to his attentiveness and inability to meet behavioral expectations as reported by his teachers. Although data indicated that he learned the classroom expectations over time, his teachers reported a conflict between the expectations he was required to meet at home and the expectations at school. A mismatch between home and school expectations is often a reason why children have difficulty adhering to school expectations (Hemmeter et al., 2008; Lane et al., 2007). Given that child development is embedded within an ecological context (Bronfenbrenner, 1977), including family culture, future research should investigate strategies that support collaborative practices across systems to strengthen home and school partnerships. Building a stronger link between a child's family and classroom culture is critical to ensure the school success of young children (Delpit, 1995; Sanchez, 2009). Through

on-going communication and reflection, teachers and parents can identify the most effective ways to support the success of all children (Dray & Wisneski, 2011; Marvin & Ogden, 2002).

A third recommendation for future research is to investigate the effectiveness of individualized teacher training on their acquisition of evidence-based practices. Microteach lessons are an approach that uses video recorded lessons and feedback to help teachers practice new skills (Amobi & Irwin, 2009; Fernandez, 2005; Ostrosky, Mouzourou, Danner, & Zaghlawn, 2012). In this study, one teaching team had difficulty learning the strategies discussed and modeled by the researcher. A more explicit training approach might have been a better way to address their needs. Microteach lessons are one way that teachers can be supported in implementing evidence-based practices with fidelity. As the literature on implementation science calls for sustained professional development practices, future research might investigate effective ways to individualize practices for early childhood teachers.

A final recommendation for future research is to evaluate teachers' flexibility in the type of communicative responses they receive from children and how this positively impacts children's ability to learn behavioral expectations. It is important for teachers to encourage multiple forms of communication in order for all children to be successfully included in classroom environments (DeThorne, Hengst, Fisher, & King, 2014). Teachers should provide children with assistance until they can independently engage in an activity (Vygotsky, 1978). For example, due to a suspected developmental delay, Shayne often had difficulty verbally responding to questions about the scripted story. An additional component to the intervention would have been to provide him with visual supports that teachers could use to check for understanding. This strategy might have helped promote his communication skills (Meadan,

Ostrosky, Triplett, Michna, & Fettig, 2011), and his successful learning of classroom expectations.

Data from this study reveal some positive outcomes of implementing a multi- component intervention to teach behavioral expectations to young children with disabilities. This study should be replicated with more intervention sessions and careful attention paid to threats to internal validity. Additionally, a more systematic and individualized process to train teachers on universal strategies that have empirical support should be implemented. A replication of this study also might focus on the impact of this intervention with children with specific disability characteristics. As some children demonstrated behavioral changes while others did not, this intervention may be most successful with children with certain disability related characteristics. Training teachers to use social stories, role play, and prompting might help create successful inclusive environments in which all children meet classroom expectations.

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Appendix A

Class-Wide Social and Emotional Intervention Matrix

Table A1

Class-wide Social and Emotional Intervention Matrix

Authors	Participants	IV	DV	Research Questions	Findings
Denham & Burton (1996)	130 preschoolers (3 ½ - 5 years old) No disabilities 13 early childhood teachers	Social and emotional intervention	Positive relationships with teachers and caregivers; expression of feelings into socially acceptable channels	Will children who experience a multi-component social and emotional intervention show significant positive changes in their observed social and emotional behavior?	Children showed decreased negative emotion (e.g., anger, hostility, sadness) and increased interactions with peer. Teachers also reported improved social behavior for their students.
Domitrovich, Cortes, & Greenberg (2007)	246 preschoolers (3-4 years old) No disabilities	<i>PATHS</i>	Emotion knowledge, self-regulation, social interaction, and social skills	Will <i>PATHS</i> contribute to significantly improved emotional knowledge, inhibitory control, attention, and problem solving for children who participate in this intervention? Will teachers and parents rate children who participated in <i>PATHS</i> as more competent and observe a decrease in problem behavior as compared to peers in the control group?	Intervention effects were found for self-regulation, emotion knowledge (i.e., children's awareness and communication of emotions, emotion receptive vocabulary), social interaction level, and social skills. Both teachers and parents reported improvements in children's social and emotional competence

(continued)

Table A1 (continued)

Authors	Participants	IV	DV	Research Questions	Findings
Hanley, Heal, Tiger, & Ingvarsson (2007).	16 preschoolers (3-5 years old) Non-specified developmental delays	Class-wide teaching program	Following directions, friendship skills, functional communication, delay tolerance	Will teaching preschoolers life skills protect children from the risk of non-maternal care? Will the short-term efficacy of a class-wide program teach social skills and minimize problem behavior?	Results demonstrated a reduction in problem behavior and an increase in preschool life skills (i.e., following directions, functional communication, and delay tolerance).
Izard et al. (2008)	191 preschoolers (3-4 years old) No disabilities	Emotions course	Emotion knowledge, emotion regulation, and social competence	Will an emotion-based prevention program (EBP) accelerate development of social and emotional competence and decrease agonistic behavior and potential precursors of psychopathology? Will EBP lead to greater increases in emotion knowledge, emotion regulation, positive emotion expression, and social competence when compared to the prevention program, <i>I Can Problem Solve?</i>	EBP produced greater increases in emotion knowledge and emotion regulation and greater decreases in children's negative emotion expressions, aggressions, anxious/depressed behavior, and negative peer and adult interaction. EBP resulted in a greater increase in emotion knowledge, emotion regulation, positive emotion expression and social competence when compared to the prevention program, <i>I Can Problem Solve.</i>

(continued)

Table A1 (continued)

Authors	Participants	IV	DV	Research Questions	Findings
Lynch, Geller, & Schmidt (2004)	396 preschoolers (4 years old) No disabilities	<i>Al's Pal's</i>	Development of resilience in children	Will children who participate in <i>Al's Pal's</i> demonstrate increased social and emotional skills and a decrease in antisocial or aggressive behavior?	Results indicated that the intervention was effective in strengthening children's skills related to the development of resilience. Children involved in the intervention demonstrated greater social and emotional competence and better coping skills than children in the control group.
Serna, Nielsen, Lambros, & Forness (2000)	84 preschoolers (4.5 years old) No disabilities	A Life Long Learning Approach to Self-Determination	Following directions, sharing, problem solving	Will children receiving a 12-week self-determination program demonstrate greater gains in mental health and related functioning as compared to children who receive standard mental health services?	Results indicated significant improvements for the experimental group on adaptive behavior, social interaction, and attention measures. Overall, children in the experimental group who were at risk for the development of emotional or behavioral disorders showed improvement in their mental health functioning.

(continued)

Table A1 (continued)

Authors	Participants	IV	DV	Research Questions	Findings
Shure (2001)	219 preschoolers (4 years old) No disabilities	<i>I Can Problem Solve</i>	Prosocial behaviors (e.g., caring, sharing, cooperating); alternative solutions to problems; sequential planning skills	Will the implementation of a social and emotional intervention teach children interpersonal problem solving skills?	Children trained on the <i>I Can Problem Solve</i> approach did not display impulsive behaviors as compared to the control group. At six-month follow-up, children who were adjusted (i.e., children who did not demonstrate impulsive and inhibited behaviors) at the end of preschool remained adjusted, as compared to children in the control group. One year later, children trained on the intervention retained their adjusted skills.
Stormont, Smith, & Lewis (2007)	25 preschoolers (3-5 years old) 3 early childhood teachers Language disability ESL	Program-wide Positive Behavior Support (PW-PBS)	Yelling, spitting, hitting, teasing, whining, telling on another child, taking materials from another child, interrupting lessons by blurting out, chewing on	Will teachers' use of key universal features of PW-PBS result in a reduction of problematic behaviors during small group instruction?	A functional relation was established for teachers' use of precorrection and praise statements and children's problem behavior.

(continued)

Table A1 (continued)

Authors	Participants	IV	DV	Research Questions	Findings
			materials, sticking tongue out at someone, pretending toys were guns, taking a turn prematurely, waiting more than 5 seconds to comply with teachers' directions, engaging in off-task behavior		
Vo, Sutherland, & Conroy (2012)	19 preschoolers 10 early childhood teachers No disabilities	BEST in CLASS	Social and emotional competence; improved pre-academic skills	Will the BEST in CLASS model increase children's appropriate behavior? Can teachers implement this model with fidelity?	Results indicated a significant decrease in problem behavior, and a significant decrease in externalizing problem behavior. The BEST in CLASS model shows promise for improving interactions between teachers and young children with problem behaviors.

Appendix B

Social Stories Matrix

Table B1

Social Stories Matrix

Author(s)	Participants	Target behavior (DV)	IV	Design	Research questions	Findings
Benish & Bramlett (2011)	4 years old = 3 Female = 1; Male = 2 No disabilities	Avoidance, refusal, physical and verbal aggression, name calling, hitting, pushing, not sharing	Social Stories	ABC; MBD	Will a social story decrease aggression and improve positive peer relations in a preschool setting?	Aggressive behavior and positive peer interaction improved for 1 participant; 2 other participants made improvements in their aggressive behavior although there was some variability in the data; 1 participant made some positive gains in amount of time positively interacting with peers.
Burke, Kuhn, & Peterson (2004)	7 years old = 2 5 years old = 1 2 years old = 1 Females = 2; Males = 2 No disabilities	Tantrums, hitting, kicking, destruction of property, frequent night waking, difficulty initiating and maintaining sleep, fighting, arguing, crying, screaming, entering parents' bed	Social Stories, tangible rewards	ABAB	Will a social story intervention with tangible rewards reduce children's disruptive bedtime behavior and night wakings for	Parent sleep diaries indicated that children had a 78% average decrease in frequency of disruptive bedtime behaviors from

(continued)

Table B1 (continued)

Author(s)	Participants	Target behavior (DV)	IV	Design	Research questions	Findings
		during the night, refusing to go to bed			typically developing children?	baseline to intervention, with another 7% decrease at 3-month follow-up. Night wakings, a problem for 2 children during baseline, were not a problem during intervention and follow-up. Parents reported improved daytime behavior for 3 of the 4 children. Parents gave the intervention high acceptability ratings and maintained a high level of treatment fidelity.
Chan & O'Reilly (2008)	6 years old = 1 5 years old = 1 Males = 2 ASD	Inappropriate social interaction (e.g., standing or sitting too close to peers causing peers to lean or move away), appropriate hand raising (e.g., above shoulder and vertical rather than horizontal extension), inappropriate vocalizations	Social Stories™, role play, answering comprehension questions	Multi-probe across behaviors	Will a social story intervention package impact social communication behaviors of with ASD?	The social story intervention led to a decrease in inappropriate behavior and an increase in appropriate behaviors.

(continued)

Table B1 (continued)

Author(s)	Participants	Target behavior (DV)	IV	Design	Research questions	Findings
		(e.g., noises, comments irrelevant to classroom activities, approaching peers and asking to play), and appropriate social initiations (e.g., approaching peers and asking to play)				
Crozier & Tincani (2007)	5 years old = 1 3 years old = 2 Males = 3 ASD	Sitting appropriately during circle time, talking with peers during snack time, playing appropriately with peers (e.g., asking to use materials, offering materials to others, using materials cooperatively, and making appropriate comments about the play of a peer)	Social Stories, verbal prompts	ABAB; ABCACBC	Will a social story intervention impact the prosocial behaviors of preschool children in an inclusive setting?	Results indicated a reduction of inappropriate behaviors and increase in appropriate behaviors across all participants.
Hsu, Hammond, & Ingalls (2012)	6 years old = 1 4 years old = 1 3 years old = 1 Males = 3 ASD; SLI; DD	Sitting at seat, following directions, raising one's hand	Social Stories	ABCB	Will a social story increase appropriate behaviors of three culturally and linguistically diverse students with developmental delays?	Results indicated an increase in the percentage of appropriate target behaviors exhibited by the participants.

(continued)

Table B1 (continued)

Author(s)	Participants	Target behavior (DV)	IV	Design	Research questions	Findings
Kuoch & Mirenda (2003)	6 years old = 1 5 years old = 1 3 years old = 1 Males = 3 ASD	Aggression, yelling, screaming, squealing, crying, throwing up food, placing hands on genitals, cheating during games with peers, moving another player's game piece, touching another player's hand or arm, making negative comments about losing	Social Stories	ABA; ACABA	Will a social story intervention reduce challenging behavior?	A decrease in the rate of challenging behavior was evident for all participants.
Lorimer, Simpson, Myles, & Ganz (2002)	5 years old = 1 Male = 1 ASD	Precursors to tantrum behavior (e.g., screaming, hitting, kicking, and throwing objects)	Social Stories	ABAB	Will the implementation of a social story intervention in a home setting reduce precursors to tantrum behavior?	Social stories intervention was effective in reducing the precursors that led to the tantrum behavior.
Schneider & Goldstein (2010)	10 years old = 1 6 years old = 1 5 years old = 1 Males = 3 ASD	Wandering around the classroom, working at a computer after the bell rang, standing next to a student at a computer and leaning over to look at the screen while standing in line, touching a computer, speaking without raising his hand or raising his hand but not waiting to be	Social Stories, visual schedules	MBD	What are the relations between a social story intervention and on-task behaviors? If the child does not positively respond to the social story alone, or there is room for improvement, can	A large effect was evident for use of social stories alone. The effect increased when the visual schedule intervention was applied to 1 participant.

(continued)

Table B1 (continued)

Author(s)	Participants	Target behavior (DV)	IV	Design	Research questions	Findings
		called on, rolling or lying on the ground, leaving the group situation without being asked by the teacher, looking away from the teacher but not to the object or person the teacher was attending to, and not following directions			the social story be replaced by a novel component to increase appropriate behaviors?	
Soenksen & Alper (2006)	5 years old = 1 Male = 1 Hyperlexia	No maintained eye contact with others, conversations with repeated phrases from Disney movies	Social Stories	MBD	Will a social story intervention teach a child to appropriately gain the attention of peers?	Results indicated that the social story was effective in increasing the target behaviors across three settings within an inclusive school.
Wright & McCathren (2012)	4 years old = 3 5 years old = 1 Male = 4 ASD	Negative verbal or physical behavior, no display of any verbal, physical or gestural instances or responses to peers	Social Stories	MBD	Does a social story intervention increase socially appropriate behavior and decrease problem behavior in preschoolers with diagnoses of ASD and are these effects maintained over a one-month period?	Results indicated a slight increase in prosocial behavior for 3 of the 4 children and some decreases in negative social interaction for all 4 of the children.

Appendix C

Sample Scripted Story from Turtle Classroom

What do we do for our lunch routine?

At Head Start, we eat lunch every day because it makes us strong and healthy!

Ms. Chrissy likes it when I help clean up during the lunch routine.

After I have finished eating, I can say “I’m done” or “May I be excused?”

Then, I can pour my milk in the sink.

And I can put my dish away.

Sometimes it is hard for me to follow the lunch routine, but my teachers or a friend will remind me of what to do next.

I can also push my chair in.

And use my walking feet to go to my cot.

When I do these things I am helping my teachers and friends.

When I learn the lunch routine, my teachers say “Great job children for following the lunch routine! You are helpful!”